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No. 15714

Vol. 3080

United States *SEE ALSO*
Court of Appeals *3079*
for the Ninth Circuit

TALON, INC., Appellant,
vs.

UNION SLIDE FASTENER, INC.,
Appellee.

UNION SLIDE FASTENER, INC.,
Appellant,
vs.

TALON, INC., Appellee.

Transcript of Record

In Five Volumes
VOLUME IV.
(Pages 1225-1657, inclusive)

Appeal from the United States District Court for the
Southern District of California,
Central Division

FILED

MAR 12 1958

PAUL P. O'BRIEN, CLERK

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(Testimony of William J. Graham.)

The Court: Are you reframing the question or picking it up? [1211]

Mr. Leonard Lyon: I am going to drop out that "extraordinary business."

The Court: Then you are reframing the question.

Q. (By Mr. Leonard Lyon): Did you take into consideration in estimating or fixing what you considered to be the reasonable value of your services in this case the fact that the counterclaim was dismissed?

A. Now, which statement are you referring to, Mr. Lyon?

Q. I think you said your services you thought were worth between 20 and 25 thousand dollars.

A. Then, in answer to your question, yes, I did take into account the fact the counterclaim had not been sustained.

Q. What do you think your services would have been worth if the counterclaim had been successful?

A. I haven't given it thought, but I would say more than I have already expressed.

Q. How much more?

A. I would say at least another \$10,000.

The Court: Now, just a minute.

By the counterclaim, when you use the phrase "if the counterclaim had been successful," Mr. Lyon, you are talking about the possibility of an affirmative recovery of damages? [1212]

Mr. Leonard Lyon: Yes, your Honor.

(Testimony of William J. Graham.)

The Court: And the Court having tried this case takes into account that the matters contained in the counterclaim were used as a defense, as well as the basis of a prayer for affirmative relief. How you are going to segregate that, I don't know.

Mr. Leonard Lyon: I will try right now.

Q. Did you devote any time in your work on this case to matters involving the counterclaim, other than matters which were also defenses to the cause of action?

A. I would say, Mr. Lyon, that it was impossible to do that. They were inseparable.

Q. I didn't ask you that.

There are matters involved in the counterclaim independent of any charge of defense in this case, are there not?

A. I think I would have to answer your question the same way.

Mr. Mockabee: Your Honor, if I may interject a minute. You would have to develop the same facts. It was a matter of how you used them, and not as to what facts were developed.

Mr. Leonard Lyon: I think, your Honor, that I am entitled to pursue this line of examination.

The Court: Yes, you are entitled to.

Mr. Leonard Lyon: Because the grounds for the award of [1213] attorneys' fees in this case are not based on any defense that is common to the counterclaim and to the defenses in the action.

The Court: I have been thinking about this, and

(Testimony of William J. Graham.)

I propose, before we get through, to direct counsel in the findings to make findings in connection with this attorneys' fee—I am stating it now very roughly—to the effect that the matter of the counterclaim and the defense had elements in common, with the exception of damage and proximate cause; that the other material as to violation of the antitrust laws and contracts, the conduct of the plaintiff, were common to both its defense and counterclaim; that there were other matters which the Court has taken into account, the obvious invalidity of Poux, the matters discussed here this morning, such as the fact that the suit was brought on six patents, and four were withdrawn; that of the two patents that remained in the case, in the case of Poux the case went to trial on claims only of 1 to 4 and 16 and 17, and in the case of Silberman the case went to trial on claims 1 to 4, 13, 32 to 40.

That matter, of course, has no relationship to the counterclaim for damages.

I am not enumerating all the matters on which findings should be made, but just some of them along this line. [1214]

Then I propose to make some apportionment in the way of a finding between the fee I would have allowed had the defense of unclean hands not involved the antitrust matter, and how much I would have allowed as the case now stands. Only for the purpose of letting there be before the Appellate Court some apportionment in the event that the

(Testimony of William J. Graham.)

Appellate Court should, for instance, disagree with me on the antitrust features of the case. The Court would then have the advantage for what it was worth of my findings as to the case, absent the antitrust matters.

Mr. Leonard Lyon: I think, also, your Honor, that if you can—I don't know if you can—but if you can indicate the different allowances, if the different factors on which you have found the basis for the attorneys' fees were overruled by the Appellate Court. In other words, they may find that one of these items they don't agree with you on, but they do with another, and the time might have been devoted to one of those other items instead of this one.

The Court: I am not going to break it down any further than that.

I don't doubt but what it would be possible to break it down item by item. But I will break it down to give two figures. One, taking into account the antitrust defense, which, of course, is not the complete defense of unclean hands. It is merely another factor added to other things [1215] which make up the complete defense of unclean hands. One figure without the antitrust matter considered, and another figure with it considered.

Further than that, I don't think it can be broken down, and I don't propose, unless you convince me otherwise, to try to break it down further, because there are too many elements that go to make up the defense of unclean hands, and the only one

(Testimony of William J. Graham.)

that seems to me subject to some segregation is the antitrust question.

And, as a matter of fact, I am not convinced that it is a very appreciable amount.

This case rested largely on written contracts and dealings entered into and carried on by the plaintiff. So that I don't think it would be an appreciable amount anyhow.

Mr. Leonard Lyon: My point is this, your Honor: For instance, in your Honor's memorandum opinion allowing attorneys' fees, you say, "Talon's conduct convinces the Court that Talon considered their validity questionable and did not, therefore, permit their adjudication."

Just assume hypothetically that that finding was reversed by the Court of Appeals, but they did not reverse some other basis that you have given for awarding attorneys' fees, the time that the witness spent on that subject certainly should be deducted from an allowance of attorneys' fees, if it can be.

The Court: That is the sort of thing that you can't segregate, and if there is a reversal on that ground it can come back and we will retry it.

The only thing that I propose to make a segregation on is the antitrust feature.

I am not sure that finding in the memorandum goes far enough.

Mr. Leonard Lyon: I would like, and I think——

The Court: I don't intend to be bound, necessarily, by my memorandum. If findings are sub-

(Testimony of William J. Graham.)

mitted which satisfy me in the light of the entire case of their validity, I propose to sign them.

I don't think that counsel need necessarily be bound by a memorandum which I have had to crowd out while I was trying cases in San Diego, and which I worked like a dog on, although you may not be happy with the result. I spent a lot of time on this case, and I was working before court and noontime and after court and Sundays and Saturdays trying to get through this case.

Mr. Leonard Lyon: I think your Honor should have the information that I am going to ask the witness in the next question in considering the subject matter that we have just been talking about.

Q. Are you aware that Mr. Lipson intends to file an appeal from the judgment in this case if it dismisses the [1217] counterclaim?

A. I would say that we had discussed it. We haven't made any decision on it.

Q. You don't know whether Mr. Lipson is or is not going to file such an appeal?

A. At the moment I do not know.

Mr. Leonard Lyon: I might state that Mr. Mockabee advised me that he was.

The Witness: The possibility is that——

Mr. Mockabee: I said, your Honor, probably there would be an appeal.

Mr. Leonard Lyon: I was going to suggest, in view of that, that having taken the evidence at this hearing and having a complete record of it,

(Testimony of William J. Graham.)

the matter of fixing attorneys' fees should await the outcome of this case in the Court of Appeals until we can see what factors are controlling and who comes out where, and fix it then, rather than now.

The Court: Mr. Lyon, you try to put a case in shape in which you attempt to anticipate the more likely things that might occur. You can't anticipate them all. If you don't do any of this segregation, of course the worst that can happen is the court says, "The matter of attorneys' fees reversed, no attorneys' fees," or they say, "Reversed and remanded. Reconsider them on the basis of what we have said." [1218]

As to what might be questions in this case that would interest the Circuit and be decisive, I have some views. The Circuit's views may be entirely different, but I have some views. I am not a polliwog, you know. I have definite views about these cases I try.

I do not think the Circuit is going to be interested or be concerned about an appeal from a dismissal of the counterclaim. I think it is patent that there was a failure of proof of proximate cause, damage and injury, directness of injury as part of proximate cause. There is a possibility because of the novelty of the use of antitrust laws as a defense, that the Circuit might say that I was not justified in basing my findings at all on the antitrust law situation.

That is a possibility, and I consider it not a

(Testimony of William J. Graham.)

strong possibility. But that is a possibility. In which event the Circuit might say, "You fixed this attorney's fee taking into account a defense you sustained which was based in part on antitrust law violation, therefore the matter has to be reversed and go back."

And assuming they agree that attorneys' fees should be fixed, they will say, "Reassess the attorneys' fees taking that into account."

It is for that possibility alone that I would make some segregation, so if they didn't want to send it back [1219] they could see what my findings were, and if they thought they were supported they might dispose of the case.

Mr. Leonard Lyon: I am not trying to press your Honor into any situation here. I am just trying to protect my record as best I can in the event the Court of Appeals says, "Well, how can we look into this attorneys' fee? Why didn't you have these elements developed in the record, if you say they exist?"

The Court: I am not going to cut you off, but I am telling you I will not segregate it.

How can I segregate, for instance, the amount of time that it took to develop a case to convince me there was bad faith on Talon's part, how can I segregate how much time it took to develop the part of the case that concerned Talon's obvious attempt to use an invalid patent to club other zipper manufacturers into line? Or how can I segregate how much time it took to develop that part of the

(Testimony of William J. Graham.)

case which showed the conference in Los Angeles and the attempt at that late date to maintain some kind of a price structure in connection with Talon's articles?

Those things can't be done.

How could I segregate how much time it would have taken to defend this case if Talon said, to start with, "We are not relying on six patents, we are relying on two; we are not relying on all 17 claims, or more, whatever it is, of [1220] Poux, and all the claims of Silberman, but we are only relying on these specific claims?"

Mr. Leonard Lyon: Maybe I can pursue that to some profit.

The Court: All right.

Q. (By Mr. Leonard Lyon): Can you tell us, Mr. Graham, what time you devoted in this total time in this case to the four patents that were dismissed out of the case?

Mr. Mockabee: I just want to inquire if you have any precedent for a request of such a minute breakdown on allocation of time and fees to the various parts of the case?

Mr. Leonard Lyon: This is a very complicated situation, and I don't know one exactly like it, your Honor.

Mr. Charles Lyon: I think the Court should be advised that the pretrial statement was filed, the record will show, a substantial number of years, one or two years, prior to the trial, and the patents that were not relied upon and the claims that

(Testimony of William J. Graham.)

were not relied upon were taken out of the case at the time of the first pretrial.

The Court: You can call my attention to what that date is. However, any work done prior to that time the question is open.

Q. (By Mr. Leonard Lyon): My question is have you any way of telling us what portion of your work on this case prior to that date was devoted to those four patents or any [1221] of the claims that were dismissed?

Mr. Mockabee: I object to this line of questioning, your Honor.

The Court: Overruled.

Mr. Mockabee: There were six patents in suit, and I don't see how Mr. Graham could have devoted a certain amount of time to four of these patents anticipating without any knowledge that they were going to be withdrawn from suit.

The Court: Objection overruled.

The Witness: My answer is, Mr. Lyon, that I cannot give you any breakdown of the time spent on those four patents, the claims in issue in those four patents.

Q. (By Mr. Leonard Lyon): Did you obtain file wrappers of those other four patents?

A. I did not.

Q. Did you locate any art especially useful for those patents that was not useful in the other two?

A. I believe that I did.

Q. Was it cited in your answer?

A. I believe some of the patents listed in the

(Testimony of William J. Graham.)

answers to plaintiff's interrogatories were prior art to the four patents—

Q. Was there a special search run on those other four patents?

A. There was a general search on all of the patents. [1222]

Q. Was your understand with Mr. Lipson, the agreement that we referred to, that you would conduct the trial of this case?

A. When Mr. Lipson first discussed my handling of this case, we never projected ourselves that far into the future, to even consider a trial.

His primary objective was to defend himself so that he wouldn't lose his business. We had no discussion at all about the trial.

Q. There wasn't any discussion about how far you would go in the case in conducting the defense? A. No, there was not.

Q. Why did you not, after devoting all this time to preparation of the case, as indicated by your transcript, conduct the trial yourself?

A. Well, the answer to that is that I discussed it with Mr. Lipson when the trial was imminent, and I explained to him that because of the reduced charges that I had made to him and the relatively small payments that I had received, that I could not afford to spend a great deal of time in California on the trial of this case, without compensation, and that he would have to pay my expenses, and that it would be a more expensive proposition for him to have me come out to try the case than

(Testimony of William J. Graham.)

if he were to have a lawyer here to handle the case.

Q. Did you appreciate in taking that view, that you were depriving Mr. Lipson of the value of your services to any extent that you had rendered him in preparing to try the case?

A. No. I told Mr. Lipson that he had available to him all of the preliminary work that I had done, all of the material that I had developed, and that I would stand ready to help him in any way that I could from New York. And I did do that. This was with the consent of Mr. Lipson.

Q. But you did realize, did you not, that that required him to hire another lawyer to become familiar with the work that you had done?

A. I did. As I stated, it was with Mr. Lipson's consent.

Q. How much of the time of Mr. Mockabee devoted to this case do you estimate was a duplication of the time that you had devoted, and which, if you had continued through to the trial, would have been avoided?

A. I would be speculating if I attempted to answer your question.

Q. To the best of your estimation can you estimate it? A. No, I can't, Mr. Lyon.

Q. When you estimated the total value of all the attorneys' services in this case as between 40 and 45 thousand dollars, what were you estimating to be the value of [1224] Mr. Mockabee's time and services?

(Testimony of William J. Graham.)

A. I would say somewhere between \$15,000 and \$20,000.

Q. And you figure, then, that Mr. Mockabee's services were worth about the same as yours, is that right?

A. No; I would say less than mine.

Q. Less than yours? A. Yes.

Q. How much less?

A. I gave you the figures. I estimated the value of Mr. Mockabee's services to be from 15 to 20 thousand dollars, and my own from 20 to 25 thousand dollars. So I would say there is a \$5,000 differential.

Q. How much additional time was required of Mr. Mockabee, included in those services because he was duplicating the work that you had done?

A. I have no way of estimating that.

Q. Could you have tried this case if you had attended on the basis of the work that you have included in your transcript of your audit here, involving only the additional court time, and such as was spent by Mr. Mockabee after the trial commenced?

A. I think I would have had to have spent a great deal more time in actual preparation than I actually did. Because I didn't try the case.

Q. When did you advise Mr. Lipson that you weren't [1225] going to try the case, what date?

A. It wasn't a question of my advising Mr. Lipson that I wasn't going to try the case; it was the

(Testimony of William J. Graham.)

case of an understanding between us that I was not going to try the case.

Q. What date did that condition come about?

A. My best memory is it was sometime in November or December of 1953 — '54. The case was tried in '55, so it was several months before the actual trial. About five months.

Q. How long had you known that the case was set for trial to commence March 1, 1955, when you withdrew from the case, or withdrew from the responsibility for the trial of the case?

A. I believe I knew in September or October of 1954 that the case had been set for trial on March 1st.

Q. Did Mr. Lipson urge you to continue in the case and conduct the trial?

A. He urged me to continue in the case to the extent of taking further depositions.

Q. In estimating the reasonable value of your services and Mr. Mockabee's in this case, you are unable to tell us how much of the amount you have stated involved a duplication arising out of your withdrawing from the case; is that correct?

A. Withdrawing from the trial. Yes. The answer is [1226] that I can't give you any estimate.

Mr. Leonard Lyon: I think those are all the questions I have of this witness, your Honor.

The Court: All right.

May the witness step down?

Mr. Mockabee: Yes, your Honor. He is his own witness.

(Testimony of William J. Graham.)

The Court: Thank you, Mr. Graham.

The Witness: Thank you.

The Court: Are you going to testify, Mr. Mockabee?

Mr. Mockabee: Yes, sir, I was going to give you an outline.

Mr. Leonard Lyon: I will accept Mr. Mockabee's testimony on his oath as an attorney in this court, without him being sworn, and he does not have to resume the witness stand as far as I am concerned.

The Court: It may be stipulated, then, that Mr. Mockabee's statement that he is about to make will be the equivalent of being under oath?

Mr. Leonard Lyon: Yes, your Honor.

The Court: And subject to cross examination by you, Mr. Lyon?

Mr. Leonard Lyon: Yes, your Honor.

The Court: All right, Mr. Mockabee. [1227]

ALLAN D. MOCKABEE

being called as a witness, testified as follows:

The Witness: I was called into this case on January 26, 1955. Mr. Lipson came to my office and told me that Mr. Graham of New York City had been in the case since its beginning; that it was rather difficult for Mr. Graham to try the case here in Los Angeles; that Mr. Fulwider had been in the case for some time, but his commitments at that time were such that he found it next to impossible to try the case at the time which it was set, because

(Testimony of Allan D. Mockabee.)

of other litigation pending, which he was preparing for trial.

And Mr. Lipson asked me if I would take the case. After some discussion I agreed to take it and attempted to get a little more time for preparation, but in view of the fact it had been set for trial I believe a year before, and the trial date had been postponed several times, I found it necessary to go to trial on that date.

The Court: What date did we go to trial?

The Witness: March 1, 1955.

From January 26, 1955 until after the termination of the trial on March 15, 1955, I hardly had a waking moment in which I was not working on this case. That includes the last four days of January, three and a half days of January, 1955, the entire month of February, which included all regular working days and practically every evening during [1228] that month, usually to a minimum of 11 o'clock in the evening, and sometimes to 12.

When the trial started on March 1st, I would spend an hour to an hour and a half before coming downtown to the courthouse, and each evening during the trial until 11:30 or 12 o'clock at night. Two mornings during trial I was in my office at 4:30 in the morning. There were two week ends during the trial, and those were entirely consumed, Saturdays and Sundays.

After the trial the deposition of Mr. Hepworth and Mr. Napp were taken by me, and the case was reopened and those depositions were admitted.

(Testimony of Allan D. Mockabee.)

During the summer of 1955 I spent time confering by mail with Mr. Graham with regard to the brief, doing research and preparation for the brief, examining the record, and numerous and long conferences with the president of defendant consumed approximately 18 days time, including the writing of the brief.

I do not have any work sheets for the time spent, but it is indelibly impressed on my mind because I never worked so hard in my life.

The Court: When you speak of 18 days, how many hours?

The Witness: Ordinary days. They would be seven hour days.

I might explain my lack of work sheets at this [1229] time.

I was telling Mr. Graham at lunch today that on the 5th of July a driver of an automobile thought that my garage entrance was an extension of the alley and went through the closed garage door and halfway out of the back wall. I have some records somewhere in that debris. I have not moved it yet, because the insurance company has not yet inspected it. Whether I could find them or not I do not know.

The Court: But you were keeping some work sheets on this case?

The Witness: Yes, sir.

The Court: Between January 26th and the date it went to trial, did you try any other cases?

The Witness: No, sir. I did spend some time

(Testimony of Allan D. Mockabee.)

after my midnight oil burning on this case keeping some of my current work going. But there was no litigation pending at that time, no other litigation.

The Court: In other words, this case, beginning January 26th, had precedence in your work?

The Witness: Absolutely.

The Court: It took the major portion of your time?

The Witness: Yes, sir, it took much more than my ordinary time.

The Court: Of course, during the trial the Court would know, without proof, that you were here every trial day. [1230]

Mr. Leonard Lyon: I wonder if Mr. Mockabee couldn't shorten this by just giving us his best estimate of the number of hours he spent in preparation of this case and the number of hours he spent in the courtroom on it.

The Court: Are you able to make some estimate, have you made some breakdown of that work?

The Witness: Yes, sir.

Do you want that broken down at all, Mr. Lyon? I could give it to you.

The Court: Break it down as to court work and office work.

The Witness: Prior to trial, the end of January and the month of February, 34 seven hour days. During trial, that means time in court as well as time in the morning before court and in the evening after trial days, 48 hours.

(Testimony of Allan D. Mockabee.)

The Court: You say this was during the trial, 48 hours?

The Witness: Yes, including trial time and morning and evening work.

Mr. Leonard Lyon: And you have some subsequent to the trial?

The Witness: Yes, there were depositions of Hepworth and Napp, which together consumed most of an ordinary day. I marked them a half a day each. No. One half a day for those two depositions. I beg your pardon. [1231]

The Court: What do you figure, three and a half hours?

The Witness: Yes, sir.

The Court: What about the time on the brief and work with Mr. Graham?

The Witness: 18 days. And one-half day in court involving re-opening of the case to admit the depositions.

Mr. Leonard Lyon: I might state, your Honor, that I am willing to accept that statement of the witness as to the time that he has employed on the case, without further proof.

The Witness: I made one mistake, your Honor. Mr. Graham just called it to my attention.

Let me start over again. The two weeks of the trial, I have got it written down here and I read it wrong. Nine trial days, days in court. 32 hours during that time spent in the evening, and 16 hours spent in the morning.

(Testimony of Allan D. Mockabee.)

The Court: How many hours do you figure a trial day?

The Witness: They ran pretty close to seven hours, didn't they, your Honor? They started at 9:30 most of them. No. It would be six hours, I guess.

Mr. Leonard Lyon: I don't think the Court would take credit for quite that amount of hours in a court day.

The Witness: Not deducting for any lunch or recess.

Mr. Leonard Lyon: I am willing to take the 48 hour statement of the witness.

The Witness: It isn't 48 hours. I made a mistake on [1232] that, Mr. Lyon.

Mr. Leonard Lyon: What is it?

The Witness: The 48 hours would approximate the actual time for your trial, not counting the morning and evening.

The Court: Your 32 and 16 equal 48. You said 16 hours in the morning and 32 hours in the evening. That would equal the 48 hours.

The Witness: 48 hours outside of court.

The Court: I am trying to arrive at what you figured were hours in court.

Mr. Charles Lyon: I have it as 54 hours. Nine times six is 54.

The Court: Well, I don't know how you lawyers do. If you are in trial and you leave your office at 9:15 for 9:30, or maybe 9, and get things ready, or

(Testimony of Allan D. Mockabee.)

you leave at 9:30 for 10, and you get back to your office at 4:45 or 5, what do you figure?

Mr. Leonard Lyon: We would figure on the basis of all day in court as a per diem. A half day in court is a half day per diem.

The Court: I understand the per diem. But so far we have been talking about hours and so much an hour. What do you figure for hours?

Mr. Mockabee: I think time in court should be under a different category, your Honor. On a per diem basis. [1233]

Mr. Charles Lyon: If you accept my 54 hours, you figure six hours a day, and we certainly know we were off two hours for lunch every day, so that gives you an eight hour day.

The Witness: That is all right.

The Court: We will figure it six hours, then. Is that agreeable for a day?

Mr. Leonard Lyon: I want it understood that I am not quarreling with the witness about his estimate as to the time. I am willing to take his estimate in whatever way he wants to stand on it.

The Court: All right.

The Witness: We will cut it down to a five hour court day.

Mr. Leonard Lyon: No. I don't want you to cut it down to anything that you don't believe is correct.

The Witness: That is agreeable with me. It so happens that your two hours during lunch is not spent in the courtroom.

(Testimony of Allan D. Mockabee.)

The Court: Counsel has agreed that we can take six hours as a court day. So we will take six times nine, which is 54.

Does that complete it?

The Witness: Yes, sir. A total of—I haven't got it properly totaled now, because I have my court days [1234] figured wrong.

The Court: The estimate I have made is based on these figures: Your office work before trial 34 times seven, 238 hours; morning and evenings while trial was going on, 48 hours; depositions, three and a half hours; brief, 126 hours. I think a total of 415½ hours, plus 54 hours in court. Is that about what your figures show?

The Witness: Yes, sir, approximately the same.

Mr. Charles Lyon: 469½.

The Court: All together, yes.

Considering the case that you tried, the nature of it, the responsibility, the problems, questions, novel and otherwise, that arose in the trial, the time and work you have put on it, the result obtained—you haven't yet told me about yourself. I don't know whether you were admitted to the bar a year ago or whether you have been practicing for 50 years.

The Witness: I was admitted to the D. C. bar—

The Court: District Court?

The Witness: District of Columbia, in 1931. At the time that I was admitted I went to a night law school in Washington, National University Law School, whose percentage of successful applicants

(Testimony of Allan D. Mockabee.)

on the bar exam is the highest in the District of Columbia. At that time I was employed by a firm of patent lawyers, Emery, Booth, Varney and Holcomb, [1235] who specialized in patent, trademark, and copyright law, and primarily patent law. That was until 1934.

At that time Mr. Emery died and we had just begun, the year before, to feel the effects of the depression——

The Court: The Court has a very vivid memory of those days. I started to practice in 1928.

The Witness: For about 20 months I was with the United States Government, occupied in work which had nothing to do with patents.

I wound up in the City of St. Paul, Minnesota working for the Government, and after being there approximately ten months I formed an association with Williamson and Williamson, patent lawyers in Minneapolis.

The Court: What year was this, now?

The Witness: From 1936 to 1949.

In 1949 I came to Los Angeles and became associated with Harold W. Mattingly, who died very shortly after I came here, and also with William Edward Hann. Mr. Hann and I entered into a partnership. Mr. Hann died in June of 1951. I then practiced alone here in Los Angeles, and in November, 1955 became associated with Fred Miller of Hazard and Miller, although I still carry on my own personal practice.

(Testimony of Allan D. Mockabee.)

The Court: Isn't there a Mattingly presently active in the patent practice in one of the firms?

Mr. Leonard Lyon: His name is still carried by a firm, [1236] but he has been deceased since 1951.

The Court: That is the Mattingly—

The Witness: That is the Mattingly of whom I speak.

The Court: Of the Fulwider firm? What is the name of that firm?

The Witness: Fulwider, Mattingly and Huntley.

The Court: All right.

That completes the history of your practice, does it not?

The Witness: I believe it does, sir.

The entire time, except for the 20 months that I mentioned that I worked for the Government, has been entirely engaged in patent practice.

The Court: All right.

Are you ready to be cross examined by Mr. Lyon?

The Witness: Yes.

The Court: We didn't ask you about a fee.

Knowing what you do about this case that you tried, the problems, intricate and otherwise, that were involved, the time you spent in preparation, in trial, on the briefs, the result accomplished, taking into account your experience as you have related it here in the law and patent field—any other factor that you want considered, Mr. Lyon?

Mr. Leonard Lyon: I would like to reserve an

(Testimony of Allan D. Mockabee.)

opportunity to cross examine on the answer to this question. [1237]

The Court: What, in your opinion, is the reasonable value of your services to the defendant?

The Witness: I would say, based upon the time expended, the conditions under which I had to prepare for trial, including approximately 100 prior art patents, and the various angles of this case, including the purely patent defenses and the antitrust defenses, in that period of time, was in the neighborhood of 15 to 18 thousand dollars.

The Court: In fixing that figure are you taking into account, as well, the factors which I stated in my question?

The Witness: Yes, sir, I am taking all those into consideration.

The Court: We will take a short recess. I have a visitor that I want to see.

(Recess taken.)

Cross Examination

Q. (By Mr. Leonard Lyon): Mr. Mockabee, have you a written agreement with the defendant covering the compensation to be paid you for your services in this case? A. I have not.

Q. Did you arrive at a definitive oral agreement with the defendant as to your compensation for those services?

A. Yes, we did; and it hasn't remained the same since we first arrived at it. [1238]

Q. When did you arrive at that agreement?

(Testimony of Allan D. Mockabee.)

A. In the beginning, it was on the day of January 26, 1955, the first time that Mr. Lipson approached me concerning taking over the preparation of the trial.

Q. Is that the agreement that is still in effect?

A. No, it is not.

Q. What was that original agreement, what were the terms?

A. The original agreement was to pay me on a weekly basis the total sum of \$2,000, and 25 percent of any recovery.

Q. When was that agreement modified?

A. I don't recall the exact date. It was not too long before trial. As a matter of fact, it wasn't very long after the first one, where, after I had realized what I was in, I told him that I thought——

Q. Wait a minute. Let's fix a date first.

A. It was during the month of February.

Q. Before trial? A. Before trial.

Q. What time in February?

A. It was in the latter part of February, probably a week before trial.

Q. And you arrived then in the latter part of February at a modified agreement?

A. Yes. [1239]

Q. That is an oral agreement?

A. That is true.

Q. Is that the agreement that is still in effect?

A. Yes, in so far as Mr. Lipson is concerned.

Q. What are the terms of that agreement?

A. I will give a little explanation of it. After

(Testimony of Allan D. Mockabee.)

having worked night and day, as I have explained, in the preparation of this suit, I told Mr. Lipson that this thing involved more than I had realized before I had read anything about it and come to the first agreement on the thing, so it was decided, and agreed between us, that I would receive \$5,000 and 25 percent.

Q. Of a recovery? A. Of a recovery.

Q. And that is the agreement that is still in effect? A. That's right.

Q. Mr. Mockabee, did you have an established per diem rate that you charged uniformly to your clients at the time you were employed?

A. I had a uniform rate.

Q. That you charged uniformly to your clients?

A. Yes, for office work.

Q. What was that hourly rate?

A. For office work it was \$30 per hour.

Q. And you had actually been paid at that rate by [1240] clients in 1954?

A. Yes; and prior to that time.

Q. Did you have an extensive practice in 1954?

A. In 1954?

Q. I am using that, because that is just ahead of January, 1955?

A. No, it was not extensive then.

Q. Can you state the total amount of your billings for your services as a patent lawyer or patent attorney for the year 1954?

A. No, I couldn't guess at it.

Q. Well, could you approximate them?

(Testimony of Allan D. Mockabee.)

A. I wouldn't like to, because I don't know what to base it on right at the moment.

Q. Mr. Mockabee, you filed an income tax return that year, did you not? A. Yes, I did.

Q. Don't you remember on what basis you paid your taxes? A. For that year, no.

I remember particularly 1951. I think my gross receipts of fees in 1951—I remember that because of some circumstances that haven't anything to do with this case, of course—were about \$26,000.

Q. For the twelve months?

A. Yes. [1241]

Q. Can you remember approximately what they were in '53 and '54, or '52?

A. No. I will tell you they dropped off considerably, and I don't know. It was much less than that. The reason for that is rather involved.

When I first came out here in '49, William Edward Hann and Harold Mattingly were together, I associated with them; a month later Mr. Mattingly died, and for a period of approximately a year there was controversy concerning to whom the practice belonged, whether it was to Mr. Hann or to a third party. As the result of that controversy, and various notices sent out by opposing claimants to the practice, many of the clients drifted away, and when Mr. Hann died in 1951, in June of 1951, there was some other business that he had carried out here from his firm in Detroit, the firm of Harney, Dickey and Pierce, and when Mr. Hann died that business sort of died with him, as far as my

(Testimony of Allan D. Mockabee.)

practice was concerned. So there was a considerable drop after the year 1951.

Q. On what basis were you associated with the firm of Mattingly, Fulwider and Huntley?

A. I was not associated with that firm at all.

Q. You were associated with Mr. Mattingly?

A. That is correct.

Q. On what basis? [1242]

A. During the months that I was here, when Mattingly was alive, it was purely as an associate.

Q. What? A. As an associate.

Q. What do you mean by that? Were you an employee or a member of the firm?

A. I was not a member of the firm. I was working on a percentage basis, a commission basis entirely.

Q. You can't remember how much money you made per month for that year, your net return?

A. About \$800 per month, I would say. That was for a period from August, 1949 until January of 1951.

Q. On what basis were you employed by Mr. Hann?

A. Until January of 1951 as an associate on a commission basis.

Q. Do you mean an employee on a percentage basis? A. That is correct.

Q. Can you tell us how much per month you averaged while you were employed by Mr. Hann?

A. I would say it ran about the same during that entire period, around \$800 a month. And then

(Testimony of Allan D. Mockabee.)

in January, 1951 I entered into a partnership with Mr. Hamm.

Q. How long were you in partnership with him before he died?

A. From January, 1951 until June 27, 1951, which was [1243] the date of his death.

Q. Can you tell us what your earnings were as a patent lawyer during that time, your share of the earnings, average per month? Just estimate it.

The Court: That part of the year, do you mean?

Mr. Leonard Lyon: Yes, your Honor.

The Witness: As closely as I can recall it, it ran about the same, about \$800 a month.

Q. Can you estimate approximately what your—

A. I might say that we had an understanding regarding what I was taking out of the firm, because the physical assets of the firm were Mr. Hamm's. I was new out here and hadn't built up any clientele.

Q. Was that the period when you were employed or retained to make some drawings by our firm?

A. I have never made a patent drawing in my life or any kind of a drawing for anyone.

Q. In 1952 you were self-employed, is that right? A. Yes.

Q. Independent, you were not associated with any other attorney? A. That is correct.

Q. And that was true in '53 and '54?

A. That is correct.

Q. And in '55 up to November? [1244]

(Testimony of Allan D. Mockabee.)

A. That is correct.

The Court: Who did you go with in November of '55?

The Witness: Hazard and Miller.

Q. (By Mr. Leonard Lyon): Can you tell us what your average, or estimate what your average earnings were from your practice of your profession during the years 1952, '53, and '54, when you were self-employed?

A. They were considerably less, because of the circumstances which I just related regarding the controversy over to whom this practice belonged.

It seems to me in 1951 and '52, that is, the last half of '51 and the first half of '52—I think in 1952 my receipts of fees were in the neighborhood of \$24,000.

Q. For the year? A. Yes.

Q. And how much in '54?

A. Much less. As I said, I don't recall now, but it was considerably less.

Q. Did you ever in your practice prior to January, 1955, earn from your practice, as much as \$9,000 a month?

A. Did I personally receive that much?

Q. Yes. A. No.

Q. Did you ever receive as much as half of that in any one month, or over a period of time? [1245]

A. No, I have never personally received that, but I have billed that much?

Q. To whom? A. To clients.

Q. Did they refuse to pay it? A. No.

(Testimony of Allan D. Mockabee.)

Q. What became of the bill? Were they paid?

A. What particular time are you speaking of? I may be confused.

Q. I am speaking about the time when you were self-employed in 1953 and 1954.

A. Oh, no. Let's see now. I don't believe in 1953 and 1954, but in 1952 I think there were months where they ran as high as \$4,500, \$5,000 per month.

Q. That is the maximum you ever billed?

A. To the best of my knowledge at the present time.

Q. Is this the first patent case you have ever conducted yourself as the counsel conducting the case?

A. It is the first one I have conducted myself, because I have always been with someone during the more than 20 years of practice.

Q. Do you consider if you were compensated at the rate of your established per diem, which you say was \$30 per hour, that that would be a reasonable compensation for your services in this case?

A. No, I do not.

Q. Have you any agreement with the defendant whereby you will receive any compensation other than the \$5,000 that you have referred to?

A. Yes, I stated that if there was any recovery in this case I would receive 25 percent of it.

Q. But if there was no recovery, you have no agreement to receive any more money; is that correct?

(Testimony of Allan D. Mockabee.)

A. That is true. But I do not consider that the value of the services.

Q. Can you give us a list of some representative clients of yours who in the year 1954 actually paid you at the rate of \$30 per hour for your services?

A. Glass-Tex Corporation, General Pacific Corporation, Good Humor Corporation of California, Crown Body and Coach Company.

You can remember these clients singly and at times when the occasion arises, but it is awfully hard——

Q. These are clients, that you mention, whose names appear on your books for 1954?

A. That is correct.

Q. And who were billed at the rate of \$30 per hour? A. Yes, sir.

Q. You do have books, do you?

A. Yes, I do have books. [1247]

Modernaire Corporation of San Leandro, California.

The Court: I am a little surprised at this cross examination.

(Off the record discussion.)

The Witness: I would still like to emphasize the fact that the period from approximately part of 1952, I would say up until the present time, was due a great deal to the controversy over who was to get the clients which constituted the practice of Harold W. Mattingly.

The Court: Mr. Mockabee, a lawyer is a lousy

(Testimony of Allan D. Mockabee.)

witness anyhow, so just answer the questions you are asked.

Q. (By Mr. Leonard Lyon): Your last remarks do not apply to 1953 and 1954, is that correct?

A. The remarks I just made?

Q. Yes. A. Yes, they do.

Q. Is that still continuing?

A. Absolutely.

Q. Did your work in this case include work on the counterclaim?

A. It did in so far as it affected the defenses in the patent action; and, naturally, Mr. Lipson, president of the defendant, and Mr. Graham, and I, discussed matters of the counterclaim and considered ways and means of procedure with regard to the counterclaim, as well as to the patent case. [1248]

Q. Have you any basis on which you could estimate the time, a portion of the time, that you devoted to this case that was devoted to the counterclaim as distinguished from the defense of the case?

A. No. And I don't see how it could be divided.

Q. When you took over this case, you found that you had to become familiar with the work that was done by Mr. Graham, did you not?

A. I had to become familiar with what had gone on in the proceedings prior to the time I came in, I had to become acquainted with the prior art, the file histories, and all of the papers.

Q. And that involved a duplication of work that Mr. Graham had done?

A. I do not know, because I wasn't in the case

(Testimony of Allan D. Mockabee.)

and I didn't observe the work that Mr. Graham did.

Q. You say you conferred with Mr. Graham extensively?

A. Yes. And he appeared to know what the case was about.

Q. Did he seem to be ready to try the case?

A. I don't know that I ever asked him that, and I don't know that I discussed the case with him with that in mind, that question in mind. He seemed to know what all the facts were.

Q. He did seem to be apprised of all the facts?

A. He certainly did.

Q. Did you get information from him and did he furnish you with facts in the case to a large extent?

A. He furnished me with all the prior art, all the papers and the complete file and the proceedings prior to the time I came into it, and the other evidence that had been collected by Mr. Graham before I came into it.

Q. And you can't estimate at all how much of the time you devoted to the case was a duplication of the work that Mr. Graham had done?

A. No, I can't, because I didn't know whether Mr. Graham was coming out here to try the case, or not, or whether Mr. Fulwider was going to try it.

Mr. Leonard Lyon: I think that is all, your Honor.

The Court: Step down.

Any further testimony?

Mr. Mockabee: Your Honor, I would like at this

time, in order to keep Mr. Beehler from having to stay around too much longer, to present Mr. Beehler as an expert on behalf of the defendant on the question of fees.

The Court: All right.

Mr. Mockabee: Mr. Beehler, will you take the stand, please. [1250]

VERNON D. BEEHLER

called as a witness by and on behalf of the defendant, having been first duly sworn, was examined and testified as follows:

The Clerk: Will you please state your name.

The Witness: Vernon D. Beehler.

Direct Examination

Q. (By Mr. Mockabee): What is your occupation, Mr. Beehler?

A. I am a patent lawyer.

Q. Do you practice alone?

A. No. I am a partner in the firm of Huebner, Beehler, Worrel and Herzig.

Q. Of this city? A. Of this city.

Q. How long have you engaged in patent practice?

Mr. Leonard Lyon: Maybe we can shorten this up. I know Mr. Beehler. If counsel will tell me whether he is being called as an expert on fixing fees, or as an expert on patent law.

Mr. Mockabee: I think the hearing is on the question of fees, your Honor.

The Court: An expert on fees.

(Testimony of Vernon D. Beehler.)

Do you stipulate, first, that he is a qualified patent lawyer?

Mr. Leonard Lyon: I certainly will. [1251]

The Court: Let's skip Mr. Beehler's qualifications, then.

But tell me, Mr. Beehler, how long have you practiced?

The Witness: 19 years.

The Court: What year were you admitted?

The Witness: 1937 to the bar of Illinois.

The Court: How long in California?

The Witness: Since '44. Twelve years.

The Court: Go ahead.

Q. (By Mr. Mockabee): Mr. Beehler, have you engaged in extensive patent litigation?

A. "Extensive" is a qualifying word. I would say an average amount of patent litigation.

Q. Are you at all familiar with the present litigation?

A. I am not familiar with the litigation, although I have looked at the pleadings and have been informed as to the character of the litigation.

The Court: Did you go through the files?

A. I went through the files, yes.

Q. (By Mr. Mockabee): Are you acquainted with the type of art involved in the litigation?

A. I am acquainted with the type of art from having looked at the patents involved, the patents in question, and [1252] to a degree the type of patents involved in the defense material, prior art patents.

(Testimony of Vernon D. Beehler.)

Q. Judging from your past experience, would you say that the preparation and defense of a suit of the subject matter of the present suit would be that of a simple case or a complicated case?

A. A complicated case, without question.

Q. How much do you charge for your office time for the preparation of patent litigation?

Mr. Leonard Lyon: I object to that as irrelevant.

The Court: What he charges is irrelevant.

I think he can testify as to what was the reasonable value of his services in preparing patent litigation.

Q. (By Mr. Mockabee): Will you answer that question, what you think is the reasonable value per hour for the preparation of patent litigation?

Mr. Leonard Lyon: I would like voir dire, if I might, on that, your Honor.

The Court: We are probably wasting time, because it is not his fee that is being charged. It seems to me that what you have to do is to make some record here as to what this man knows about this case.

He has looked the file over and the exhibits, I take it.

The Witness: Yes. [1253]

The Court: Is that right?

The Witness: The patent exhibits.

The Court: You heard Mr. Mockabee testify to his background and experience, and so forth?

The Witness: Yes.

(Testimony of Vernon D. Beehler.)

The Court: You heard Mr. Graham testify as to his experience?

The Witness: I did.

The Court: You are personally acquainted with Mr. Fulwider, I suppose?

The Witness: I know him well, yes.

The Court: Did you hear the stipulation that Mr. Fulwider had done some work on the case and had billed the sum of \$1,374.35?

The Witness: I heard that testimony, yes.

The Court: And that he was in the case approximately two years, while Mr. Graham was in charge of the case Fulwider was handling some matters on this end.

The Witness: Yes, I knew that.

The Court: Do you know this Kleinman who was an attorney from another city? No. He is local here, isn't he?

Mr. Mockabee: Yes. He is a general lawyer; not a patent lawyer.

The Court: Do you know him?

The Witness: No, I don't know Kleinman at all.

The Court: You heard the testimony that he had billed the defendant and been paid \$890?

The Witness: I heard that, yes.

The Court: You understand this case was filed what date—'49?

Mr. Mockabee: March, 1949. October, 1949.

The Court: And from the file, I take it, you noticed the various proceedings that had gone in the case?

(Testimony of Vernon D. Beehler.)

The Witness: I noticed they were voluminous, yes.

The Court: And then the trial started on March 1st, 1955 and continued to March 15, 1955, with approximately 1,137 pages of testimony.

May it be stipulated that those are the dates and the pages?

Mr. Leonard Lyon: Yes, your Honor.

The Court: Mr. Mockabee, do you also stipulate?

Mr. Mockabee: Yes, sir.

The Court: And then the matter was briefed. Did you notice the briefs in the file?

The Witness: I didn't examine the briefs, no. I understand it was briefed, but I didn't examine the briefs.

The Court: The Court filed a memorandum opinion in the matter. Did you see that?

The Witness: I have not read it. I am somewhat aware of its length, and I know it has been referred to, and I [1255] have heard some of the content of it discussed, but I haven't read it.

The Court: You looked over the two patents involved?

The Witness: Yes. I didn't study the patents, but I did look them over.

The Court: Are you aware of the fact that the Court has held both patents invalid and not infringed.

The Witness: I am aware of that.

The Court: And that the Court has alternately

(Testimony of Vernon D. Beebler.)

said that if valid and if infringed, that the defense of unclean hands is available to the defendant?

The Witness: That portion of the case I am not familiar with, or the proceedings.

The Court: What other matters do you want to inquire into?

Mr. Mockabee: I wanted to get into the matter of the rate of charge.

Q. (By Mr. Mockabee): In a case where these numerous issues were involved and the defendant was successful in securing a decision declaring the patents invalid and not infringed, that the plaintiff was guilty of unclean hands, misuse of the patents in violation of the antitrust laws, would you state that the defense of that case warranted a substantial fee?

A. I would state that it would warrant a substantial fee. [1256]

Q. Would you say that because of the outcome of the case just recited, that counsel for the defense should or should not be awarded at least as high a fee as is generally charged in the defense of patent cases?

Mr. Leonard Lyon: I would like to ask a question of the witness by way of voir dire and try to avoid objections, if I can.

The Court: You may.

Voir Dire Examination

Q. (By Mr. Leonard Lyon): I would like to ask you, Mr. Beebler, what criteria do you understand

(Testimony of Vernon D. Beehler.)

govern the award of attorneys' fees in a patent case?

A. Whether the fee should be awarded or the amount of the fee?

The Court: What are the factors?

Q. (By Mr. Leonard Lyon): Not whether they should be awarded, but by what they are.

A. How much they should be?

Q. Yes.

The Court: I think you mean what factors or criteria should be taken into account in determining a reasonable fee in a case where a court has ordered it would allow fees?

Mr. Leonard Lyon: That is correct, your Honor.

The Witness: I would consider, first, what is a reasonable fee for services of the kind in question, under ordinary circumstances, let us say. I am not mindful of those circumstances related today, because I couldn't enumerate them. I am aware of their character. But from my own experience and from a general knowledge of how fees are charged, I say that these things are fair to consider:—

The Court: The things you are going to tell us now?

The Witness: Yes.

The Court: All right. What are they?

The Witness: The difficulty of the case is one; the value of a win to the client is another, how much it means to his business; another factor is whether, if for example I were trying the case all by myself, if I had to work 14 hours a day I would

(Testimony of Vernon D. Beehler.)

say the value of my services would be different from what it would be if I worked six or seven hours a day and had an assistant—

Q. (By Mr. Leonard Lyon): Are you speaking now of the value to you, rather than the client?

A. As an example, we are talking about what are reasonable attorneys' fees under the circumstances.

Q. What are the factors that you should consider in arriving at a reasonable attorneys' fee?

A. That is correct, yes.

Whether I mentioned it, or not, whether the case [1258] is won or lost, that would be an element in the value of how much the fees would be.

The Court: Would you consider the length of time that it took to prepare the case for trial?

The Witness: By all means.

The Court: Would you consider the length of trial?

The Witness: Well, I would consider the length of trial, of course, in the computation of reasonable attorneys' fees, except—

Q. (By Mr. Leonard Lyon): Are you considering this question from the standpoint of what is a reasonable attorney's fee from the standpoint of Mr. Mockabee, what he should get, or are you considering it from the standpoint of what a reasonable attorney's fee should be allowed to the client irrespective of whether or not the client pays it to the lawyer? A. The latter.

What a particular attorney—what value he may

(Testimony of Vernon D. Beehler.)

assign for his services, or somebody else may assign to it, I haven't been considering, particularly.

Mr. Mockabee: Your Honor, I think the question before the Court is, what is the value of the services rendered.

The Court: Just a minute. He hasn't finished his answer. Go ahead.

The Witness: My answer is that what I am saying here [1259] has to do with what is a reasonable attorney's fee for the services that the client received.

Q. (By Mr. Leonard Lyon): Do you think a factor to be considered in that is the degree of professional ability, skill and experience of the lawyer rendering the services.

A. Professional ability?

Q. The degree of professional ability, skill and experience of the lawyer rendering the services?

A. I will answer that in three pieces, if I may. I would say that the ability of the lawyer should be considered, and his skill should be considered, because it is reflected in his ability. I would put his experience last, because I can readily appreciate that a man with 25 years of experience might do more poorly than a man with ten years of experience.

Q. Do you think that a factor to be considered is the professional character, qualifications and standing of the attorney? A. Yes.

Q. You have stated that you are going to give your opinion based on your experience on matters

(Testimony of Vernon D. Beehler.)

of this kind. Are you acquainted with the award of attorneys' fees in numerous cases, patent cases in this District? A. Not numerous cases.

Q. In any? A. Some. [1260]

Q. Are you acquainted with the basis on which they have been awarded in this District, on the basis of \$200 per day for each day of court trial, and twice that number of days at that rate for preparation, such as Judge Mathes uses?

A. I am not familiar with that particular formula, no.

Q. What formulas do you know of having been used in this District?

A. I don't know of any formulas. I am not aware that they have used a formula.

Mr. Leonard Lyon: That is all for the moment, your Honor.

Direct Examination—(Resumed)

Q. (By Mr. Mockabee): Mr. Beehler, do you always, in charging a client for litigation, base your fee entirely upon time?

A. Not always upon time.

Q. What do you consider an important factor, other than time, which enters into the estimation of the value of your services in litigation?

Mr. Leonard Lyon: May I hear that question, please?

(The question was read by the reporter.)

Mr. Leonard Lyon: I will not object to that question if it will be understood that the witness is

(Testimony of Vernon D. Beehler.)

explaining it in connection with the reasoning that he follows in testifying as to what would be a reasonable award in this case. [1261] Otherwise I don't think his own values are involved.

Mr. Mockabee: Leave out the word "yourself"; instead of your services, just say "services."

The Witness: May I have the question?

(The question as amended was read by the reporter as follows: "Q. What do you consider an important factor, other than time, which enters into the estimation of the value of services in litigation?")

The Witness: I think my answer to that would be a repetition of some of my answers to Mr. Lyon's questions.

Q. (By Mr. Mockabee): I was trying to emphasize a point. I will put it this way:

Does the result obtained affect the value of services? A. Yes.

Mr. Mockabee: That is all, your Honor.

The Court: You haven't asked him his opinion as to any amounts and time.

Mr. Mockabee: I beg your pardon.

Q. (By Mr. Mockabee): In a case such as the case at bar, do you consider that the time spent in preparing for trial, during trial, and subsequent to trial, such as on final briefs, is worth more than on a simple case involving less time? [1262]

A. Well, I think I can answer it this way: We are rather accustomed to assign a value to an attorney's time in trial, and I am accustomed to think in

(Testimony of Vernon D. Beehler.)

terms of \$200 a day for trial time. In my opinion that rate should apply to depositions as well as court time.

In picking that value for time, I am accustomed to consider a trial day as the number of hours in court, plus some preparation in advance of the 10 o'clock hearing or 9, as it may be, and some windup time at the close of court after 4 o'clock, if that be the time. But I don't consider the trial day midnight hours.

With respect to preparation before trial, in my view it is equally important, oftentimes more important, than time spent actually in court.

Q. What do you think would be a proper value per hour for the time spent in preparation or out of court?

A. In my view \$30 an hour would be average.

Q. Do you think in some cases this amount might be increased?

A. In some cases the amount could very reasonably be increased.

The Court: Now, you have given us figures here which you say you are accustomed to charge and you are accustomed to think is proper, and so forth. From what you know of this case—we are interested in the fees in this case—what [1263] would be your ideas of a reasonable fee, your opinion of a reasonable fee, either by the hour or in toto for the trial, or for the work of all the attorneys in it, or any way you want to give it to us.

The Witness: Under the circumstances as I un-

(Testimony of Vernon D. Beehler.)

derstand them the way this case was prepared for and tried, in my view, in my opinion, the reasonable rates which I just mentioned, \$30 an hour and \$200 a day, would be insufficient.

Q. (By Mr. Mockabee): Do you have any opinion as to what a reasonable and proper rate would be?

A. I should say an increase in that between 20 and 50 percent would not be unreasonable.

Mr. Mockabee: That is all.

Cross Examination

Q. (By Mr. Leonard Lyon): Do you know of any other cases, to your knowledge, where fees have been awarded on that basis in a patent case?

A. On what basis, if you don't mind saying?

Q. The basis that you just suggested would be proper in this case.

A. I can't point to a basis of award for attorneys' fees in any cases, to answer the question the way you frame it.

Q. Do you regard it as unusual in a patent case that there be a defense of antitrust violation or misuse sustained? [1264] Is that an extraordinary thing nowadays in patent suits?

A. That such a defense be sustained?

Q. Yes.

A. I don't know whether I consider that extraordinary, or not.

Q. The defenses are pleaded in many patent cases, are they not? A. Yes.

(Testimony of Vernon D. Beehler.)

Q. And you know a reasonable number of them in which they have been sustained, do you not?

A. I am appreciative of the fact that many times defenses are pleaded, many defenses are pleaded, and some are more important than others, and that a defendant puts in all of the defenses he can hope for, some of which he doesn't expect may be too strong, but nevertheless if they are available to him I know that he puts them in and hopes for the best.

Q. Do you mean to testify that your measurement of the reasonable value of the services in a patent case such as this would be the same, irrespective of who appeared as the attorney in the case—I mean irrespective of the standing or professional experience of the earning power of the attorney that appeared in the case?

A. I am aware that one attorney may charge more than another. [1265]

Q. What I mean is, is it your testimony that you are disregarding that factor in arriving at the figure that you have given?

A. I am aware that a client may expect to pay one lawyer more than another.

Q. Would this fee that you have stated you think would be a reasonable fee, \$200 a day and \$30 an hour, be your testimony, irrespective of what the experience or the professional skill or standing of the attorney trying the case is?

A. If I may put it this way: If the life of my business depended on it, and a man appeared for

(Testimony of Vernon D. Beehler.)

me and won for me, I don't think that I would draw the line too sharply as to whether or not he was the man of highest standing in the community or one who had not yet made a reputation.

Q. In other words, it is your view that what governs is what is accomplished in this particular case, rather than the standing or professional status of the attorney before the case is tried; is that right?

A. I would say that when the man demonstrates his ability by the successful outcome, his ability deserves to be measured that way, rather than by what other people think of him.

Q. You have heard the testimony in this case that various lawyers participated in its preparation, and do you [1266] understand that that involves some duplication of effort?

A. I wouldn't call it duplication. Two heads are better than one.

Q. One of them retires in favor of the other, so we have that situation.

A. Well, not even that. Because I am quite well aware that frequently in patent suits, and probably more frequently than not, there is more than one lawyer on each side, and we don't consider it there a duplication of effort, because one lawyer contributes one thought to the defense or the prosecution, and another lawyer contributes another thought, and the contribution of the two of them frequently results in more than double the ability.

Q. You were here during Mr. Graham's testi-

(Testimony of Vernon D. Beehler.)

mony, in which he conceded that his withdrawal from the case involved some duplication, were you not?

Mr. Graham: I don't like to interrupt, but I object to the statements of counsel for the plaintiff about my retiring from the case.

I did not retire from the case; I just did not plan to be at the trial, and later did appear at the trial.

Mr. Leonard Lyon: I didn't mean withdraw from the case in the final sense, but——

The Court: Reframe your question.

Mr. Leonard Lyon: ——but he turned the trial over to [1267] Mr. Mockabee, after being in the case for four years, except that he appeared and conducted some examination on the antitrust phases of the case.

The Witness: Yes, I am aware of those circumstances.

Q. (By Mr. Leonard Lyon): It is your testimony that in spite of those circumstances there was no duplication of work in this case?

A. I strongly suspect, Mr. Lyon, that the defendant got more for his money by the shift than if he had left it all in the hands of the man who started it.

Q. You mean to say that you think Mr. Mockabee being brought into the case produced a different result than if Mr. Graham had handled it by himself?

A. I didn't say that. I made no reference to result.

(Testimony of Vernon D. Beehler.)

Q. When you are testifying that a reasonable fee is a figure of \$30 an hour, do you mean to say that that would be a reasonable fee irrespective of how long the attorney devoted to preparing a case.

A. When you say "how long," do you mean the number of hours?

Q. Yes. Suppose he took a year to prepare a case that another man would prepare in a month, would your testimony still be the same?

Mr. Mockabee: Your Honor, I think this is a little off the subject. It hardly took me a year's time to prepare the [1268] case, as the evidence shows.

The Court: Overruled.

The Witness: I think I will need the question again.

(Question read by the reporter.)

Q. (By Mr. Leonard Lyon): On that point, I mean by "testimony would be the same," do you still say that there should be an award as a reasonable attorney's fee of \$30 for each hour used in the preparation of the case?

A. If I understand your question, one man takes a year to prepare—

Q. Yes, and another man does it in a month.

A. —and another man does it in a month, and we are considering the number of hours in each day the same?

Q. Yes.

A. So one man takes twelve times as long as the other?

(Testimony of Vernon D. Beehler.)

Q. Yes.

A. If the man in one month does all in that month that the other man did in a year, then their services would be comparable.

Q. Have you sufficient knowledge of the circumstances in this case, so that you feel prepared to say that you believe that an award should be made of \$30 an hour for all the time put in in preparation of this case by all the lawyers?

A. From my knowledge of what has happened, I wouldn't [1269] think that would be enough.

Q. Do you think you have sufficient knowledge of this case to say that all of the time was required that was put on the case by all the lawyers?

A. I don't have enough knowledge of the case to know whether time was wasted.

Q. Would you consider that an award of \$200 per day for court trial time in this case, plus twice that amount for outside preparation, was consistent with the award of reasonable attorneys' fees by the courts in this District that you know about?

A. I couldn't answer that question, because I am not familiar enough with the circumstances on which the courts in this District based their findings of attorneys' fees.

Mr. Leonard Lyon: That is all, your Honor.

The Court: May the witness step down?

Mr. Mockabee: Yes.

The Court: We will adjourn until 10 o'clock tomorrow morning.

Do you have further evidence?

Mr. Mockabee: We want to put Mr. Lipson on the stand for a little while.

If it doesn't inconvenience the Court too much, can we make it 9 o'clock again? Mr. Graham has his family with him and they have a reservation on a two-something train [1270] tomorrow afternoon that they would like to make.

The Court: Is 9 o'clock all right?

Mr. Leonard Lyon: It is all right with me if it is all right with the Court.

The Court: Nine o'clock is all right.

How much time would you want tomorrow?

Mr. Leonard Lyon: I am going to ask the Court when this proceeding is over if it will allow me to submit the record in this case to my client and ask my client if they will suggest what they believe would be a reasonable fee in this case.

I have my own ideas, but I don't like to be put in the position of stating them until I have checked with my client.

The Court: Why should we take what the client thinks is a reasonable fee? They are not experts on attorneys' fees.

Mr. Leonard Lyon: It would be in the nature of a stipulation. And I am not empowered to make a stipulation as an attorney for the client without that client's permission.

The Court: I understand that, but are you going to offer any proof of the reasonable value of the services here?

Mr. Leonard Lyon: I want to ask the client if

they want to put on any proofs. They may not want to put on any proofs at all. [1271]

The Court: I take it the record has been practically made. I don't know what else Mr. Lipson might have that would be pertinent to this issue.

Can you get in touch with them before court tomorrow morning?

Mr. Leonard Lyon: We don't know how it would be possible to do that. They are in Pennsylvania.

The Court: What do you suggest, we continue it?

Mr. Leonard Lyon: As soon as the reporter can get me the record I will send it back to them immediately and ask them to read it, and tell them that I want to make a statement to the Court on what I consider to be the proper attorneys' fee in this case, along the line your Honor indicated you would like this morning. And I propose to say so much, and I want to know if they have any objection to my saying so before I say it.

Otherwise I feel my hands are tied. I don't feel as an attorney in the case I can make a proffer of a stipulation of that kind without consulting my client.

Mr. Mockabee: Your Honor, I think the plaintiff had some knowledge of this.

Mr. Leonard Lyon: I already tried to do this once with their permission, Mr. Mockabee, and we couldn't agree, and I don't want to, unless Mr. Mockabee wants me to, state to the Court what figures he and Mr. Graham asked me to [1272] agree to.

Mr. Mockabee: I have no objection, if Mr. Lyon is willing to relate the whole circumstances.

The Court: Let's take it up tomorrow morning at 9 o'clock.

(Whereupon at 4:50 an adjournment was taken to reconvene at 9 o'clock a.m., Friday, August 3, 1956.) [1273]

Friday, August 3, 1956, 9:00 a.m.

The Court: Call the case.

The Clerk: 10450-C Civil, Talon, Inc., vs. Union Slide Fastener. For further trial.

Mr. Mockabee: Your Honor, I would like to, in just a few seconds, supplement my qualifications or experience.

It has been some years ago, but I made a number of extensive patent investigations of zipper methods and apparatus for United-Carr Fastener Corporation, for Scoville Manufacturing Company, and for a German concern whose name I cannot remember.

The investigation was of machines of a type different from the Silberman machine in suit, but they did include methods of formation of the zipper elements and methods and apparatus for attaching the elements to the tape.

So much for that, your Honor.

The Court: What did that investigation consist of—going over the art?

Mr. Mockabee: They were made personally by me in the Patent Office. I made searches thoroughly covering the zipper art. Some of them were infringement investigations to determine whether cer-

tain proposed constructions infringed their patents. There were investigations to determine whether certain patents in the art belonging to other companies would be [1274] valid in view of the extent of the investigation which I made hoping to find something that the Patent Office had not found.

Some of them were merely novelty investigations, but most of them dealt with validity and infringement.

Now, your Honor, I would like, if I may, to call Mr. Leonard Lyon to the stand.

Mr. Leonard Lyon: If your Honor please, I stand on my privilege as an attorney not to be called as a witness in the case. I think I should present my views as an attorney in the case.

The Court: Aside from the propriety of it for just a minute, I don't know that you have any such privilege, a general privilege not to be called as a witness. Even judges can be called in their own courts as to facts that they know. But I anticipate that probably what Mr. Mockabee is going to do is to call you as an expert. Is that it?

Mr. Mockabee: Not exactly, your Honor. I am going to call him with regard to facts which certainly I don't believe are privileged information, relating to the trial of this case.

Mr. Leonard Lyon: All I know about the trial of this case I learned as an attorney, your Honor.

The Court: What you may have learned as an attorney might be privileged and it might not.

Mr. Leonard Lyon: That is correct.

The Court: That doesn't answer it.

Are we just wasting time, or what are you getting at, Mr. Mockabee?

Mr. Mockabee: Mr. Lyon extensively yesterday dwelled on the amount of cases that I had tried alone, and I would like to get a little bit of the other side of the picture on this thing, which I think would be properly in the record.

The Court: What would you propose to prove by Mr. Lyon?

Mr. Mockabee: One thing, I would like to ask Mr. Lyon when he last tried a case by himself. I don't think that is privileged matter.

Mr. Leonard Lyon: There is no award of attorneys' fees involving my services in this case, your Honor.

The Court: I am not going to take time to do that. I have tried enough patent cases to know that an important case is rarely tried by one lawyer, and I know what goes on in my court. I have seen the Lyon firm present on many occasions, and I know that generally there are a couple of them present. Once in a while one would be present.

It isn't going to assist me any.

As I indicated by my irritation yesterday, I was a little resentful of the cross examination of you. We are not going to go any further into the matter by any examination of Mr. Lyon on that matter.

Mr. Mockabee: I think the record is clarified on that point then, your Honor.

There is one other question that I would like to ask Mr. Lyon. If he did not agree in discussion with me about a week to ten days ago that a fee for my

services, a reasonable fee for my services, was not \$16,000.

Mr. Leonard Lyon: You suggested that to me, but I didn't make any commitment on behalf of my client or myself about it.

Mr. Mockabee: Didn't you say you saw no objection to a fee of that type?

Mr. Leonard Lyon: I said I hoped that the client would agree to the fee.

Mr. Mockabee: In other words, in your opinion it was not an unreasonable fee?

Mr. Leonard Lyon: I didn't agree to that.

I did express the belief that Mr. Graham's fee was without question out of line. I think you remember that.

Mr. Mockabee: But you did——

Mr. Leonard Lyon: I told you that your fee would be considered and that I hoped that the client would go along in reaching an agreement with you on what your fee was.

Mr. Mockabee: In other words, that you would recommend it to your client?

Mr. Leonard Lyon: That involved other factors about settling the case, too. [1277]

Mr. Mockabee: Would you care to explain all those factors.

The Court: That is something that I don't want to go into.

Mr. Leonard Lyon: That's right.

The Court: The discussion between you on possible settlement, or even possible settlement of an

issue in the case, such as the amount of a reasonable attorneys' fee, would not be proper.

All right.

Mr. Mockabee: My point was that if Mr. Lyon thought that a certain fee was not unreasonable, I don't think that fee should reflect any amount of money in settlement of the case.

The Court: This was apparently a discussion between you to settle an issue, and any statements made in connection with that, when an agreement was never reached, would not be admissible. To put it in evidence, it would be an admission, and that is why negotiations looking toward the settlement of a case or the settlement of an issue are not properly put in evidence.

Counsel should be free to discuss matters without having it later said that one of them had made an admission.

I won't hear any evidence on that.

Mr. Mockabee: All right, your Honor.

Mr. Graham: If your Honor please, I would like to call [1278] Mr. Lipson to the stand.

The Court: What issue is this on?

Mr. Graham: This is largely, your Honor, corroboration of my own testimony, and there are a few matters that I did not testify to that Mr. Lipson's testimony would be of more value than mine, because mine was hearsay.

The Court: All right.

The Witness has been sworn in the trial, but swear him again.

PHILIP LIPSON

called as a witness herein by and on behalf of the defendants, having been first duly sworn, was examined and testified as follows:

The Clerk: Will you please state your name?

The Witness: Philip Lipson.

Direct Examination

Q. (By Mr. Graham): Mr. Lipson, do you recall having a series of telephone conversations with me commencing in December of 1949 and extending into 1950, during which the matter of attorneys' fees was discussed with you?

A. Yes, I do.

Q. Do you recall having a meeting with me in New York in the latter part of 1950 at which the matter of attorneys' [1279] fees was also discussed?

A. Yes, I do.

Q. Can you tell the court briefly what that discussion was?

A. As I recall, Mr. Graham, I contacted you, because you were recommended to me, not principally because of the fact that you were known in the zipper art, but because I was told you were a man with a heart that would take the case at issue whether there was a lot of money involved in it or not.

When I spoke to you I appealed to you that I had contacted other attorneys and was informed that a thorough investigation and a defense of a case of this type here involving these patents would run in the neighborhood of \$50,000. Having been a

(Testimony of Philip Lipson.)

corporation organized and capitalized at \$50,000, that was equivalent to being thrown out of business.

I spoke to you and explained to you the situation, that we were unable to raise such fees and that I was informed by the various members of the industry that it had been the Talon practice in the past to start cases against various competitors——

Mr. Charles Lyon: Just a minute. I object to what he has been informed by other people in the industry, and move to strike it.

The Court: It is what he was telling counsel as part of a conversation by which they arrived at the fees. The other [1280] issues of the case have been tried. There is no harm done.

Objection overruled. Go ahead.

The Witness: I was informed, as I said——

The Court: Is this what you told Mr. Graham?

The Witness: Yes.

The Court: All right.

The Witness: That I was informed that in most cases litigation having been started by Talon, it was always withdrawn at the eleventh hour; that the Talon Corporation did not dare to bring these patents to trial, and that, therefore, in my opinion it was just a matter of treading water and showing up, a willingness to fight, waiting for Talon to come across with some proposition to settle the case.

I have spoken to Mr. Graham in that respect, that our firm is unable to spend large sums of money, and that it would be perhaps much better for us to get out of business the best way we could.

(Testimony of Philip Lipson.)

Mr. Graham told us that he would try to charge us fees that would be nominal.

I heard Mr. Graham state yesterday that he told us that he would charge us about half of the normal fees.

As I recall it correctly, I had told Mr. Graham that we may not even be in a position to pay half of the fees.

He said we would get along.

And these conversations took place in several telephone [1281] calls.

Mr. Graham was recommended to me——

The Court: Don't wander around. Let's get down to the nub of the thing and get this wound up.

The Witness: Mr. Graham had told me, I believe, to send him \$400, I believe, as a retainer. I don't recall the exact sum. And I believe that I had sent him either that amount or a little bit less than that. I haven't got my records before me so that I cannot verify those. I would have to bring all of my books here.

The Court: Has that answered your question?

Mr. Graham: Yes.

The Court: All right. Let's go.

Q. (By Mr. Graham): Mr. Lipson, do you recall ever having any discussion with a representative of the plaintiff in this case regarding attorneys' fees?

A. On a number of occasions.

Q. Well, do you recall any particular occasion in 1953?

A. Yes. I had a meeting——

(Testimony of Philip Lipson.)

Mr. Leonard Lyon: I think we should identify the parties present, your Honor, before he states what the conversation was.

Q. (By Mr. Graham): Will you state what representative of the plaintiff discussed this matter?

A. Mr. Ralph B. Meech, the secretary of Talon.

Q. Do you recall when that took place in 1953?

A. It was, I believe, in March, I don't know the exact date, and it was in New York City.

Mr. Leonard Lyon: May I ask a voir dire question, your Honor?

Was this a conversation had in the course of an attempt to settle this case, a discussion of settlement?

The Witness: That is correct.

Mr. Leonard Lyon: Then I object to going into the question, your Honor.

The Court: Objection sustained.

Q. (By Mr. Graham): Did you have any discussion with me, Mr. Lipson, in the latter part of 1954 concerning my participation in the trial of this case? A. Yes.

Q. Do you recall when that discussion took place?

A. That discussion took place in either September or October of 1954.

Q. Will you tell the court briefly what that discussion was?

A. I informed Mr. Graham that I had a discussion with Mr. Fulwider, who was local counsel for our firm; that I discussed with him the matter that

(Testimony of Philip Lipson.)

it appeared to me that the Talon Corporation is going to go through with this suit, they are not going to withdraw, and I wanted to know what it would [1283] involve to try this case. Mr. Fulwider informed me that it would involve——

The Court: This is what you told Mr. Graham?

The Witness: Yes, your Honor.

(Continuing) ——that it would involve between thirteen and fifteen thousand dollars. And, furthermore, in view of the financial condition of the defendant, he wanted a \$12,000 deposit made in the bank so that he could withdraw sums of money from it as the trial went on.

I informed Mr. Fulwider that I was in no position to deposit \$12,000, whether he could take a lesser amount and the balance could be paid out.

He explained to me that he was tied up——

Mr. Leonard Lyon: I object to the conversation with Mr. Fulwider, your Honor.

The Witness: This is what I informed Mr. Graham.

The Court: He said he is relating to Mr. Graham this conversation he had with Mr. Fulwider.

The Witness: That's right, that is the reason that I told Mr. Graham.

Mr. Fulwider had told me that he was tied up with some cases, that it would take him at least two months, possibly more, to acquaint himself with the details of this case, with which he was unacquainted. He only acted as counsel here, as a front, all the material had been sent to him by Mr. Gra-

(Testimony of Philip Lipson.)

ham. [1284] And that Mr. Fulwider had told me that he would have to engage counsel to represent him in the other cases and spend two to three months, plus the cost of the trial, and he explained to me that in addition to that it may cost from a thousand to two thousand dollars to engage patent counsel—patent experts.

I suggested to him that I should be the patent expert. He was against that idea, because of the fact that he thought that I could not act as the defendant and as the patent expert.

I then asked Mr. Graham whether he could come to Los Angeles to try this case.

Mr. Graham told me that his calendar was such that he could not expect to come to Los Angeles in March; that he, likewise, having had expenditures in this case and having carried approximately \$10,000 in fees that he did not collect, that he could not very well come to Los Angeles without getting some sums of money, that at least I should raise five or six thousand dollars.

I informed Mr. Graham that I could not raise that money; that the most that I could possibly raise by borrowing is \$5,000; that I had endeavored to take a chattel mortgage on the business in order to raise the funds which Mr. Fulwider had asked and I could not raise it.

Mr. Leonard Lyon: This is supposed to be a conversation, as I understand it, with Mr. Graham?

The Court: Yes.

The Witness: That is correct.

(Testimony of Philip Lipson.)

The Court: All this you told Mr. Graham?

The Witness: Yes.

The Court: Let's hurry on to the end of it.

The Witness: Mr. Graham told me that he would try to do the utmost he could, and if possible, if he could get away and I needed him badly, he would come down here; that I would have to pay his expenses.

Mr. Fulwider had asked me to sign—I told that to Mr. Graham—that he had asked me to sign a release in September so that he could file it not later than January 1st.

The Court: For substitution of attorneys?

The Witness: That's right.

I had known Mr. Mockabee—I told Mr. Graham that I had known Mr. Mockabee, because he had filed a patent, an application for a patent for me, and I had gone to Mr. Mockabee and presented this case to him, and he told me that it would involve \$5,000 or more, that he did not know the details, that he would have to familiarize himself with it, but Mr. Mockabee was willing to go along and have me pay him out in small installments, and I then informed Mr. Graham at another conversation that I had engaged Mr. Mockabee and that he should send all the material to Mr. Mockabee.

The Court: All right. [1286]

Q. (By Mr. Graham): Mr. Lipson, you recall the trial of this case took place in March of 1955, and that I was here in Los Angeles on several of the trial days. Will you please tell the court

(Testimony of Philip Lipson.)

whether or not I had discussions with you and with Mr. Mockabee during that period while I was in Los Angeles working on the case?

Mr. Leonard Lyon: I have already accepted the witness' transcript of his time in the case. I am not challenging it.

The Court: Just answer yes or no.

The Witness: Yes.

The Court: All right.

Mr. Graham: I think that is all, your Honor.

Mr. Leonard Lyon: I have no questions, Mr. Lipson.

The Court: All right. Step down, Mr. Lipson.

Is that the defendant's showing?

Mr. Graham: That is the defendant's showing, your Honor.

I would just like to state that the defendant would like to have a provision made that if this case is appealed, that some allowance of attorneys' fees to the defendant will be made in connection with the appeal.

Mr. Leonard Lyon: I think that is premature, your Honor, and improper. It couldn't constitute anything but just a threat that the plaintiff shouldn't appeal.

The Court: What is the practice in that? Are those fees fixed by the appellate court? [1287]

Mr. Charles Lyon: Your Honor, I think I could answer that question for you.

In the case of *Filtex vs. Atiyeh*, I researched the

law, because Judge Tolin awarded attorneys' fees to us there and there was an appeal.

It can be fixed by the appellate court, or this court retains jurisdiction after the mandate, assuming they win the case on appeal, to increase the attorneys' fees to cover a satisfactory fee on appeal.

Mr. Graham: That is what I have in mind.

Mr. Charles Lyon: You don't have to make any order on it now at all. It takes care of itself automatically.

The Court: I would retain jurisdiction to consider the matter, if there was an appeal and a mandate was returned.

Mr. Graham: Thank you.

The Court: How do you propose to proceed, Mr. Lyon?

Mr. Leonard Lyon: If your Honor please, I think I can shorten these proceedings by stating our position, and then if your Honor wants any brief of authority on this digest of the evidence, we will be glad to present it.

It is our position that any award of attorneys' fees at this time to the defendant in excess of \$13,500 would be excessive.

The basis for that view and that contention is that that will compensate the defendant for all of the attorneys' fees [1288] that it has paid or owes, and implicit under the award of attorneys' fees it is our position that the court should not and cannot award more than the fees that the defendant has actually incurred.

This is not an award of compensation to the at-

torneys, as your Honor stated, but is an award to the defendant, and an award of attorneys' fees in excess of the attorneys' fees for which the defendant is liable, in our opinion, would be improper and excessive.

If your Honor accepts that proposition, that means that we do not need to go into the reasonableness or the value of the services of the attorneys, and I would very much like to avoid that if I can, because I don't like to be in the position of questioning other attorneys about what they think their services are worth.

I will say this: That we are expressly, on any basis of the award that your Honor may decide is proper, we are expressly conceding the reasonableness of Mr. Kleinman's fee, which has been paid, and we are expressly conceding the reasonableness of Mr. Fulwider's fee, which has been paid. We do not challenge the reasonableness of Mr. Mockabee's \$5,000 fee, which is the fee that the testimony shows is to be paid him, and all that is to be paid him under the circumstances here by the defendant.

We do not challenge the reasonableness of Mr. Graham's [1289] per diem rate, but we call attention to the fact that on his testimony he agreed to serve in this case for a half of that fee, and he was to gain anything else out of the recovery in the case, and there is no recovery.

The Court: Now, wait. That was Mr. Mockabee's agreement, but I don't think Mr. Graham had any interest in the recovery at all.

Mr. Graham: I had no contingency arrangement whatsoever regarding recovery.

Mr. Leonard Lyon: I thought it was Mr. Graham.

The Court: Mr. Mockabee had.

Mr. Leonard Lyon: I am sorry about that.

Mr. Mockabee: Your Honor, the contingency was on the basis of any recovery on the part of the defendant.

Mr. Leonard Lyon: Also, it seems to me that in considering Mr. Graham's fee, that if the recovery is to be measured by the time, that allowance should be made for the fact that a substantial amount of his time was devoted to the counterclaim, which certainly has complicated this case, required consideration——

Mr. Graham: If I may interrupt, your Honor. I don't think there is any——

The Court: Just a minute. Let Mr. Lyon finish. Go ahead.

Mr. Leonard Lyon: I think that that should be taken into [1290] consideration, because the counterclaim has not been successful, and we are still being plagued by it and pressed by it in the case.

Also, I think consideration should be given to the fact that Mr. Mockabee's time, at least a very substantial part of his preparation time, was required because Mr. Graham did not continue to conduct the case at the trial, and it required the employment of another lawyer.

I would like to also state one other fact that we

want to call the court's attention to, and that is the statement was made by Mr. Graham, or some other witness maybe, also, that the value of this case involved the future value of the history of the defendant corporation, that the business of the defendant corporation was at stake.

I don't know whether Mr. Graham has overlooked or forgotten, but I think the court will remember that in this case the plaintiff filed an undertaking that if successful it would license the defendant at its established royalty rate. So that the only actual thing in controversy here was whether the defendant should pay that royalty rate.

The Court: The royalty rate might have been the difference between survival or failure, Mr. Lyon.

Mr. Leonard Lyon: It was the royalty rate that the evidence showed was being paid by the other licensees of the plaintiff. [1291]

And I would like your Honor also to have in mind that the four patents that did not go to trial in this case were eliminated from the case by order of November 24, 1952. So there have been no services with reference to those patents since that date.

The Court: What was the date?

Mr. Charles Lyon: Pretrial, November 24, 1952, your Honor.

Mr. Leonard Lyon: 1952.

The Court: And the additional claims were eliminated at that time?

Mr. Charles Lyon: That's right.

Mr. Leonard Lyon: That's right.

Mr. Mockabee: That was three years after the complaint was filed, your Honor.

Mr. Leonard Lyon: I suggested to Mr. Beehler yesterday that there was a practice in this district in fixing attorneys' fees, to fix them on a formula, and I know that the formula is not binding on this particular court even if some other judge in this district follows it, but I thought I would just as an illustration show you where in a recent case that formula has been followed.

That is a decision in this court in *Krieger vs. Colby*, rendered June 19, 1952, case No. 13202, by Judge Westover. I will read what Judge Westover has to say about this, how he [1292] fixed the fees in that case, because it involves some familiar names.

He says:

"This court has hereinbefore found that the defendants knowingly and deliberately infringed plaintiff's patent. If ever in a patent case attorney fees are to be awarded, they certainly should be awarded in the case at bar.

"Plaintiff was represented by Messrs. Robert W. Fulwider and Harold C. Holland. Mr. Holland filed an affidavit to the effect that he spent three days in the trial of the case, three days in preparation for trial, and three days investigating the facts—a total of nine days. Mr. Fulwider filed a similar affidavit, showing that he spent nine days in the preparation and the trial of the case. As a result, we have a total of 18 days spent by rep-

utable legal practitioners. They assert that a reasonable value for attorneys' fees in this case would be \$250 per day. It appears from fee schedules published by various bar associations that a minimum sum to be allowed for attorneys' fees in the trial of a case is \$150 per day. It may well be that attorneys in a patent case are entitled to more than counsel handling other [1293] litigation. The court feels that a reasonable amount to be allowed as attorneys' fees in this case for both attorneys involved is the sum of \$3,000— or \$1,500 each."

That is the exact formula that I was expressing to Mr. Beehler, and I think that practice has been followed in numerous other cases in this court.

If the court wishes to follow that practice in making the award in this case—

The Court: I don't wish to follow that practice.

These bar schedules I am familiar with. They don't mean a thing to me. I don't know that there is any schedule of the L.A. Bar. Are you familiar with one?

Mr. Leonard Lyon: I don't know of any.

The Court: These schedules that he talks about are Inglewood Bar, San Fernando Bar. I know of no schedule by the L.A. Bar.

However, I have fixed patent fees before. I don't know whether you gentlemen, your office, was ever on the receiving end of fees from my court or not. Have you been?

Mr. Leonard Lyon: I don't remember your Honor ever fixing a fee in a case.

The Court: Have you been on the other end when I fixed fees against your client?

Mr. Charles Lyon: No. [1294]

The Court: I have fixed fees, and I have had cases where the showing of what was paid out, in my opinion—where the facts of the particular case seemed to indicate it was more than a reasonable fee, I allowed a fee, I remember, in one case, for less than the amount that was shown to have been expended.

I don't think there is any controlling factor by itself. I think it is a question of the entire facts of the case.

Mr. Leonard Lyon: I think that implicit in awarding an attorneys' fee to a prevailing party is the thought that it is not to be made a windfall or not to be a means of the defendant making a profit on his attorneys' fees. I think implicit in that, in such an award, is that the maximum fee that could be awarded is the amount that the attorneys' fees cost the client.

This is not an award—

The Court: That can't be an absolute rule, either. Because take the case of a contingent fee where the client has no money at all, and the attorney does the work on the prospect of getting a few; if you use that rule in that case, then you would award no attorney's fee. On the other hand, the fact that the attorney works on a contingency

can't be a factor in determining what is a reasonable fee.

Mr. Leonard Lyon: I appreciate that.

The Court: Also, if you had a case where the attorneys [1295] had fixed a definite fixed amount in dollars and cents, it might well be that what was paid or agreed to be paid would be the maximum. The only variation we have from that here is that Mr. Moekabee, of course, had a contingency arrangement of a part of a recovery. Query: Whether the recovery might include what the client got for the attorneys' fees, as well as what he got for the counterclaim.

But in the case of Mr. Graham, as I understand his testimony, his testimony was that he would bill for a minimum fee and would accept this minimum fee, but that he expected a larger fee if he was successful.

I think that might be a fair summary of his testimony.

Now, if that is true, then it is difficult to say absolutely that Mr. Graham's agreement for a certain amount would be the limit of recovery. In other words, you have a point, but I don't think it is absolute in any sense.

Mr. Leonard Lyon: As I understood Mr. Graham's testimony, as he just stated a moment ago, he had no contingency in the lawsuit.

The Court: That is right. He had no contingency, strictly speaking. We all heard his testimony. He would take this amount as a minimum fee. If he was successful, he expected a larger fee.

That is a different thing from a contingency, strictly speaking. [1296]

Mr. Leonard Lyon: Would your Honor want us to brief this subject, or would you want a collection of authorities?

The Court: If you want to file something on it. It isn't going to be difficult for me to decide, but I wouldn't object to a brief.

Mr. Leonard Lyon: If you don't need one, your Honor, I don't want to burden you with one, because this is a matter within your experience.

The most unusual thing about this case is that in the cases with which I have been connected, the attorneys have brought in their audit and their diaries, and their charge transcripts, and the clients have brought in the bills of those attorneys, and the only question has been are those amounts excessive.

Here the client is not content to claim compensation for what he actually owes his attorneys, but he is trying to obtain an award greatly in excess of that amount.

I am making the suggestion that we do not challenge the reasonableness of the facts that these attorneys have brought out about what work they did, and the reasonableness of their rates, but that we do object to an award in excess of those amounts.

The Court: I have your position in mind.

Can we submit the matter, then?

Mr. Leonard Lyon: Yes. [1297]

Mr. Graham: I would just like to answer Mr. Lyon very briefly.

I apologize to the court for answering, because I think most of these things are self-evident and have already been brought out; however, Mr. Lyon made some statements here that I think do require correction.

In the first place, he said that it appeared from my testimony that a substantial amount of my time was spent exclusively on the counterclaim, and I don't think——

The Court: Let's not talk about that. I have my own views about the counterclaim, and my views are that the major fight in this case was over the patents, the time was spent on the patents. The counterclaim showing consisted of a bunch of contracts, which took a little discovery, but was not the intricate part of the case.

It is true that there was some briefing done on the anti-trust problem, which is part of the hours shown on briefing, but the counterclaim problem was not the big part of the case.

Had you got into—which I don't think you could have ever proved, but had you got into the question of trying to prove causation and actual damage, it is true this case might have been much more intricate.

As the matter turned out, in my opinion it was a minor part of the case.

Mr. Graham: And the other thing that is self-evident [1298] your Honor already knows, this undertaking that Mr. Lyon talks about, for the

plaintiff to give the defendant a license even if the plaintiff won the case. That undertaking was filed not on the court house steps but right here in the court during the trial, after all the preparation had been done.

The Court: I understand. That doesn't mean anything to me, either. If the patents aren't valid, why should a man pay any license fee on them? A license fee, a royalty, might be the difference between survival and collapse on the part of a small concern.

Mr. Graham: The last thing, your Honor. If Mr. Lyon's views should be accepted, that the fees to be awarded to the defendant for my services should be limited to bills rendered, I should like to point out that there was no bill rendered for services that I performed after the trial in connection with the briefing.

The Court: I understand.

Mr. Mockabee, do you have something?

Mr. Mockabee: No.

The Court: Is the matter submitted?

Mr. Mockabee: Yes.

Mr. Graham: Yes.

The Court: Before it is submitted, let's do a couple of other things.

These affidavits were filed, Mr. Clerk? [1299]

The Clerk: Yes.

The Court: They will be stricken from the file, and the affidavit of Warren H. F. Schmeiding will be given Exhibit No. BZ, and the record will remain. The objection was sustained to it, but we

will give it an exhibit number for identification only.

(The exhibit referred to was marked as Defendant's Exhibit BZ for identification.)

The Court: The affidavit of Bean will be stricken from the file, the clerk will cancel the filing stamp on it, but it will be given Exhibit No. CA for identification, and the record will remain on that. The objection was sustained to its admission.

(The exhibit deferred to was marked as Defendant's Exhibit CA for identification.)

The Court: And the affidavit of Fulwider will be stricken from the file and be given the identification No. CB for identification, and the record will remain on that. The objection was sustained to Exhibit CB for identification.

(The exhibit referred to was marked as Defendant's Exhibit CB.)

The Court: Now the matter is submitted?

Mr. Mockabee: Yes, sir. I just want to express my appreciation, your Honor, for arranging this time when Mr. Graham was here on the Coast. I didn't realize it was taking [1300] up your vacation.

Mr. Leonard Lyon: I appreciate your Honor taking up your time out of what should be your vacation, sitting here listening to this.

The Court: I am not going to decide it from the bench, because I want to go back and look into it a little further.

I will tell you right now I am not going to allow \$40,000. On the other hand, plaintiff's have prac-

tically conceded that it should be \$13,500, so I couldn't allow you less than \$13,500. But it is not going to be \$40,000.

In my own views in these awards of attorneys' fees, you take into consideration the entire case, the difficulty, the problems, the time, the experience and eminence of counsel, the results accomplished. No one factor is decisive. And it is a question of arriving at some reasonable determination.

Nor is the fact that the defendant succeeded indicative of the fact that they should reap a windfall of attorneys' fees which should not be reasonable.

The law has provided that only in certain cases may these attorneys' fees be granted. When they are granted, the law itself says they must be reasonable, which means taking into account all these considerations.

There was a lot of work done on this case. There may have been some duplication. Mr. Mockabee and Mr. Graham worked diligently on it. The court will take into account all [1301] those factors and arrive at some determination.

I want to say one thing more and say it for the record. There always has to be a first time. I never yet have been reversed on the merits of a patent case. That is not bragging. Maybe I have just been lucky. This may be the one. But so far, although I have been reversed on the question of attorneys' fees in two of those cases, every one of my patent cases has been affirmed.

This case can be affirmed on appeal if proper briefs are written, I have no doubt about it. But

unless you write proper briefs, you are going to be in trouble. I am speaking now to the defendants.

The Lyon office writes excellent briefs. They do a good job in their briefing work, and I am familiar with their work and am familiar with their cases that they have tried before me. They probably have tried as many patent cases before me, almost as many as most of the other patent bar put together. They haven't always been successful.

I remember early on the bench here—I went on in '49—I think the first three cases that came up, they lost every case, and I finally said, "I am deciding against you again, but I don't want you to think it is because of the firm that is in the case."

The way they fell I held some patents valid. I think young Mr. Lyon here was the one, or maybe it was Mr. Lyon who [1302] spoke up and said, "We don't like to lose cases, but we are pleased to find a district judge who will hold a patent valid once in a while."

Of course, those were back in the black days when all patents were being struck down. Now things have eased up a little bit.

I have spent a lot of time on these patents. I am convinced that these patents are invalid. Care is going to have to be given to drawing up these findings and drawing up this amended pleading. If this case is properly briefed, you are in, in a breeze, as far as the defendant is concerned. If

it isn't properly briefed, you are going to be in trouble with the Lyon firm, because of the type of work they do.

I realize that Mr. Mockabee is a young lawyer, he doesn't have the facilities or the staff that the Lyon firm has, and I know it is difficult to put out the same type of work that can be done when you have a big staff of experienced men in the background on that work.

I have been favorably impressed with Mr. Graham, but he is a long way off. I trust he will give some assistance in this matter.

Mr. Mockabee: In that respect, Mr. Graham, when will you reach New York again?

Mr. Graham: Not until the 16th of August.

Mr. Mockabee: I wonder if we could have a little more [1303] time on the amended complaint?

Mr. Leonard Lyon: May I make one statement, your Honor?

The Court: On this point?

Mr. Leonard Lyon: I thought you were through.

The Court: He has asked for additional time to file an amendment to conform to proof.

Mr. Leonard Lyon: That is all right with us.

I would like to make this statement, and it can be referred to at any time in the case, or in connection with the fixing of these attorneys' fees, either by the court or by counsel on the other side, and that is that we concede, or do more than concede, we join in the statement that we think the quality of the work that Mr. Mockabee did in this case was excellent, and we are not questioning,

under the factors in the case, that point at all. We are conceding it.

Mr. Mockabee: Thank you very much, Mr. Lyon.

The Court: I think your time runs out about the 20th, is that it? Let's not worry about that. How much time do you want?

Mr. Mockabee: What do you think, Mr. Graham?

The Court: How about September 15th? Is that all right?

Mr. Graham: That would be fine. That applies to the findings, too?

The Court: Yes.

Mr. Leonard Lyon: That would me fine for us, too. [1304]

The Court: That is a Saturday. You had better make it September 14th.

Anyhow, I am merely pointing out what you are going to have to do if you are going to win this case. If it is properly briefed, you have won it. As a matter of fact, the finding of validity and non-infringement, I think, can be sustained. If that is sustained, the court never gets to the alternate ground of unclean hands.

Mr. Mockabee: We are not only going to have to work for a client, but for the record.

The Court: If you falter or stumble, then you are in trouble. I am no oracle, but I tried some cases in this court, and I have sat occasionally on the Circuit, and I know how they approach these things.

Those are my views.

Mr. Mockabee: Yes, sir. Thank you very much, sir.

The Court: Since Mr. Graham is a stranger out here and is going to leave our fair city, I would like to invite all counsel into my colleague's chambers, and we will chat a minute before you go.

Mr. Leonard Lyon: All right, your Honor. [1305]

[Endorsed]: Filed Sept. 6, 1957.

[Title of District Court and Cause.]

TRANSCRIPT OF PROCEEDINGS

Monday, November 26, 1956, 10 a.m.

(In chambers.)

The Court: I suppose I ought to go over this amendment to conform to proof. Have you both been over that carefully? You filed an answer to it, didn't you on November 1, Mr. Lyon? On October 1 you filed an answer—oh, it's an amended answer, that's right.

Mr. Mockabee, you got an order and you replied to the counter claim heretofore filed, which would be your reply to the counter claim and the amended answer.

You originally sued on about six patents, didn't you, or seven?

Mr. Lyon: Five, wasn't it.

Mr. Mockabee: Six.

The Court: Six. The stipulation eliminated it down to about two.

Mr. Lyon: That's right.

Mr. Mockabee: That's right.

The Court: I notice the answer refers to all of them, but that won't do any harm.

Mr. Lyon: If you are going through the amended answers, the only difference between the first amended answer as originally filed years ago and this new one, I have made notations on it—on page 3 and paragraph 11, sub paragraph B and C are the new matter. [1]

The Court: B and C are new.

Mr. Lyon: That is right.

The Court: Let me look at those.

All right.

Mr. Lyon: Page 4, subparagraph F is the new matter.

The Court: All right.

Mr. Lyon: Nothing new on page 5.

On page 6, about line 14, beginning with the words "defendant has a license under said Silberman patent and plaintiff, as assignee of Silberman, is bound by—"

The Court: Down to about 20?

Mr. Lyon: Through "licensee by Silberman" in the third line from the bottom of that paragraph.

The Court: All right, let me look at this.

Now, what's new on page 7?

Mr. Lyon: The last paragraph. That's all.

The Court: Has the counter claim been changed?

Mr. Lyon: No.

Mr. Mockabee: No.

Mr. Lyon: No changes after May 7th.

The Court: Well, you allege estoppel, in connec-

tion with the McKee visit, but you don't sufficiently allege change of position in connection with Silberman. However, since you have alleged estoppel, I suppose change of position would be part of it. [2]

Well, let's look at the findings. Whether you have to retype these or not, I don't know.

But on line 18 and line 19 of your first page you have, in the preamble of the findings, "Order for judgment entered." Now, you're leading with your chin.

Mr. Lyon: I see.

The Court: You have this problem that certain orders made by the court can become a judgment, and I generally say in the memorandum that "Judgment will be entered hereafter." I don't want it "Order for judgment entered." If you retype it, you can strike that out.

Mr. Mockabee: Yes.

The Court: The easiest case I can imagine is this: Where plaintiff sues for money, the court tries the case and decides it and gives the clerk a memorandum for judgment for the defendant and the defendants enter it up. That is liable to be a judgment and his time for appeal is probably going to start from the time the clerk enters it, unless the clerk says the court has decided "Judgment will hereafter be entered." There are some recent cases kicking that around and it is causing some trouble.

Mr. Mockabee: I will retype that.

The Court: I don't know whether you have to retype it. I have crossed it out here. We'll see.

All right, paragraph 5 at page 2, can we get the date of [3] expiration?

Mr. Mockabee: On April 20, 1954 would be the expiration date. The complaint says it was granted April 20, 1937.

Mr. Lyon: Yes, that would be correct.

The Court: Your 17 years runs from the date of granting.

Mr. Mockabee: That's right.

Mr. Lyon: April 20, 1954.

The Court: After the word "expired" insert "on April 20, 1954."

Mr. Lyon: That's fine.

The Court: Somewhere in here I wanted the claims that are in issue. You have very broad findings about these patents. Well, actually, by some pre-trial stipulation only certain claims were in issue.

Mr. Mockabee: Yes, I have a new judgment, your Honor, and I put those in there. I thought I would wait until we went over these this morning.

Mr. Lyon: Well, this new judgment is improper. According to the new rules, I think what your judgment should be is that pursuant to the foregoing findings and conclusions of law it is hereby ordered, adjudged and decreed that the complaint herein be dismissed and the plaintiff take nothing thereby, and that the counter claim be dismissed and the defendant take nothing thereby. This business of reciting all these conclusions of law in the judgment— [4]

The Court: I haven't looked at it yet, but the

new rule hasn't changed anything except to require everything under one document. But that can be waived. In other words, if you get findings and conclusions in one document, you can still sign up a separate document. The judge can waive that rule. But we have a new rule for the drawing up in one document of findings, conclusions and judgment but your judgment should still be the same kind of judgment you previously used.

Mr. Mockabee: I think Mr. Lyon has the original.

The Court: We have a pre-trial stipulation in here, don't we, that sets forth the claims in issue?

Mr. Mockabee: They are in that judgment, your Honor.

The Court: Did you check it?

Mr. Mockabee: Yes, against the stipulation. Here it is, your Honor.

The Court: All right. Well, I don't know whether it can be inserted in here or not, or whether it has to be redrawn.

Mr. Mockabee: Your Honor, I can redraft this and make the judgment and conclusions all in one document, so we will have it according to the rule.

The Court: Then at the end of paragraph 3, on jurisdiction, insert a finding that by stipulation the patents in issue and the claims of each patent and so forth are——

Will that be satisfactory, Mr. Lyon? [5]

Mr. Lyon: Yes, your Honor.

The Court: Then on 6, probably should list the claims 1, 2, 14, 16 and 17 of the approved patent.

And then again in 8, list the claims of the personal patent—9 claims.

Mr. Mockabee: Well, would that apply to 8, your Honor, where we are talking about what the disclosure taught?

The Court: It is not important as to 8; 8 could be left general.

I think in 9, the claims ought to be in there.

Mr. Mockabee: Yes.

Mr. Lyon: In 10, too.

The Court: And the claims ought to be in 10.

Now, on 11, list the claims of Silberman. You will probably have to by reference, at least, put it also in the second sentence; in the device of the Silberman patent shown by said claims.

Mr. Lyon: Which one are you on now?

The Court: I'm still on 11. There are two sentences there, and you list the claims to start with, and then you say: * * * In the device of the Silberman patent shown by said claims, is not a new combination of elements.

Now, on 12 you will have to list—you may be able to do it by reference by saying “the claims in issue” each time. [6] You don't have to list them each time. But again, disclosure in the claims in issue (Silberman)—

Now Plaintiffs' Exhibit 5 was the claimed infringed device, was it not?

Mr. Lyon: No, that was the machine we bought.

Mr. Mockabee: Plaintiff's commercial structure of the Silberman patent.

The Court: Well, the machine was supposed to illustrate—

Mr. Lyon: It was what we claim we made under the patents.

The Court: It was the alleged infringed device?

Mr. Lyon: That would be the defendant's machine; that would be the infringing device.

The Court: I didn't say "infringing": I say the device that was infringed.

Mr. Lyon: Yes.

The Court: Again, in 13 you have this matter of claims again. In other words, this has to be limited to the claims in issue. You can't have a finding on claims which were never tried.

At the top of page 4, first line, after the word "report," insert "to his company," and on the second line, after the word "but" insert "he."

Now, I don't know that this is clear: "made oral statements to the contrary." By "the contrary" you mean he told [7] the president of the defendant that it did infringe?

Mr. Mockabee: No; made oral statements to the effect that there was no infringement.

The Court: All right, strike out "to the contrary"; "made oral statements to the president of the defendant," insert something to the effect that there was no infringement by the defendant in the machines that he was operating.

Mr. Lyon: I certainly don't know of any evidence in the record that would support the last sentence in paragraph 15.

The Court: Well, I think that is a fair inference from all the facts.

Mr. Lyon: We bought that patent to suppress Silberman to keep him from manufacturing these machines for the industry at large.

The Court: Well, that matter was but an inference. He could have had it for other purposes.

Now, on 16, elements of the Silberman '793, the 17 elements of the claims in issue in Poux.

Now, what is this admission of plaintiff's expert regarding the showing in Johnson '667?

Mr. Mockabee: You made reference to that in your memorandum, your Honor, as I recall it. He was cross examined with regard to the showings on the chart relative to the Johnson patent, and he admitted that where he had stated [8] Johnson did not show elements of the Poux. Actually, certain elements were shown.

The Court: While you are redrawing, you had better put the full elements of the Poux patent in.

Mr. Mockabee: All right.

The Court: And again, everything in the claims in issue in the Poux patent.

Put in the full number of Smith.

The alleged method of the claims in issue in Poux.

In 19 you have the same problem. Maybe you can correct it merely by the insertion of "claims in issue" in the last line.

You have the same problem in 20.

Actually, 22 is more of a conclusion than a finding of fact. The Circuit will or will not be struck

by that, depending on how they feel. Sometimes they will write and say to separate your findings and conclusions, and other times they will never raise it. But the better practice is to try to segregate your facts.

Mr. Mockabee: Well, I treated that, your Honor, as being a fact that was found on the basis of the testimony of the witness Lipson.

The Court: Well, I will leave it, except for that change of position; add to that "expended money, [9] expanded facilities," or whatever the problem is there. That is a factual matter.

Mr. Mockabee: Yes.

The Court: And then, of course, the conclusion is the fact of license and estoppel.

Again, you have "expanded facilities": that is probably enough there, in that 13.

Mr. Mockabee: Do you want to leave that in 23, your Honor?

The Court: Yes, that is all right. I just wonder whether it goes far enough. It probably does—expended money.

In 26 you have to have claims in issue.

In 29, the mere fact that you find that plaintiff's witnesses testified is not a finding of that fact. Strike out "Plaintiff's witnesses testified."

Now, on 30, what you have got there in part is a conclusion of law that the contract was illegal. You should expand that out. I don't think there is too much harm in having some conclusions creep into the findings, if you have the findings of fact. As I

recall, that particular contract was one for dividing up the market, was it not?

Mr. Mockabee: Was that the American agreement? I have forgotten now.

The Court: AH—do you remember?

Mr. Mockabee: Where they settled the suit; told them to [10] keep it pending as long as possible?

The Court: No, that is not that one. AH, I think, is the earliest.

Mr. Mockabee: Restricted the quota?

The Court: I was looking for my memorandum. Here it is.

Mr. Mockabee: Page 13, the last paragraph.

The Court: Well, I would have to see the agreement, but as I recall it was the one in which it divided markets or allocated territory.

Mr. Lyon: It didn't allocate any territory.

The Court: Well, it divided markets. Do you have a copy of this?

Mr. Mockabee: No, I don't. It contained restricted licensing provisions.

The Court: There is one of them where Talon collected royalties on everything that Silberman would buy. But that is another one that was clearly illegal. That was Exhibit 7; "Cap-Tin agrees that all quantities of fasteners or fastener chain which it may acquire from others and resell shall be included along with fasteners made by machinery licensed in computing the royalties to be paid." There clearly was a contract causing Cap-Tin to pay on unpatented articles.

But that is not the one I am thinking about.

Mr. Lyon: What is illegal about that?

The Court: To make a man pay royalty on unpatented [11] material?

Mr. Lyon: Yes. You can measure your royalties on anything. You can make an agreement to pay royalties forever.

The Court: Sure, but you can't say to a man pay royalties on all zip chains you make on these machines and also pay us royalties on all zip chains made by others, regardless whether they are made by us or not. That is clearly tying in unpatented matters with patented. You can't do that, any more than you can say pay royalties on what you make here and also you have to pay royalties on——

Mr. Lyon: It is quite common to write a license agreement which says that licensee will pay royalties on all of the automobiles he manufactures whether or not they come under any of the patents.

The Court: Well, that is different. That might possibly be all right. But here were things that he was not manufacturing; he was buying from someone else.

Now, that is not AH. Look over AH and I think you will find that it divided up markets or assigned territory. Get the facts on that and then we can define the legality.

In 34 you say that the licensees of Talon didn't pay royalties to plaintiff. Some of them did, didn't they?

Mr. Mockabee: Yes. Shouldn't we properly say "while some licensees * * *"?

The Court: And in no case did plaintiff pay roy-

alties [12] —I think in some cases the licensees paid nothing and in some they did—but in no case did Talon pay any royalties. I don't know that I get the 'therefor.' Did I say that in my memorandum that of that alone the net result was the curtailment of production of all such licensees?

Mr. Mockabee: I think that's it. I will have to find it. I don't think that is your wording, your Honor. I think I put that in there. That was a net result of all those licensees that had the restricted provisions in them.

The Court: Well, it's all right if it is based upon everything, but not upon the mere facts found on this one paragraph. You had better separate that and make it a separate paragraph and tie it in with the works and not with this one business.

Mr. Mockabee: Yes.

The Court: Now, in 38, on page 7, you say "if the licensee exceeded his quota of production provided for." You ought to look it up again. That may be true. It seldom had a quota free. Well, I don't remember the number. I have circled here the word "if."

Mr. Lyon: Which one?

The Court: 37 on page 7, lines 18 to 21. It is hard to remember for sure if there was a quota free limitation on that.

Mr. Mockabee: In your memorandum, your Honor; Exhibit [13] 7, the first Silberman contract of July 16, 1945, is particularly offensive. It continued until cancelled by Exhibit 8, the second Silberman contract of April 18, 1949. In paragraph

5(a) Cap-Tin (Silberman) agreed to pay 10% royalty on all slide fasteners "made by the use of any machine or processes" covered by the patents in excess of—

Yes, well that's all right.

In 43, there I suppose you need not particularize the claims because they never brought either Poux or Silberman to issue in any of the claims.

Now, you have objected to 46, haven't you?

Mr. Lyon: Right.

The Court: What's wrong with that?

Mr. Lyon: There is no evidence of any communication whatsoever from McKee to any of the engineering personnel of the plaintiff. The only evidence of any communication at all is that letter that is in evidence, and it doesn't refer to any machinery or patent.

The Court: That is true, there is no evidence. But when the device that Talon brought out has some of the various things in it that Silberman-Lipson had, and Lipson himself testified to that effect from his knowledge of the industry that they borrowed from, I think I can make that finding.

Mr. Lyon: I don't think it is an issue, but if we can [14] try that issue we can show each one of those things is old art long prior to the time Lipson engaged in the zipper industry.

Mr. Mockabee: I think Lipson testified to a number of these different improvements, the reason why he made them, the fact that he made them of his own knowledge, and there is no refutation of it by the plaintiff.

The Court: I'm going to leave it as it is. I will overrule the plaintiff's objections.

Mr. Lyon: How about the objection to the failure to find on the counter claim?

The Court: I haven't got to that yet.

On page 10, I think I would say "which is considered remote." I don't want to insult the Circuit. They may not think it is remote. Strike out "which is completely remote."

Mr. Mockabee: All right sir.

The Court: Now, there definitely has to be findings of the counter claim. It was tried on the merits.

Mr. Lyon: On my objections before you, your Honor.

The Court: Yes.

Mr. Lyon: I think it can be certainly found, in accordance with my suggested finding 49, that none of the acts of the plaintiff herein constituting a violation of the anti-trust laws of the United States—quoting from our proposed [15] objection: "Failure to find that none of the acts of the plaintiff found herein to constitute a violation of the anti-trust laws of the United States has caused injury to the defendant in its business or property."

Mr. Mockabee: Your Honor, I don't believe that that was the way you found it. In the judgment I have just presented here, at page 3: That the court holds that the counterclaim of defendant be dismissed on the ground that the acts of plaintiff constituting a violation of the antitrust lacks sufficient cause or relationship to any damages which plain-

tiff suffered as a result of said actions of plaintiff.” I think Mr. Lyon’s proposal is considerably broader than the court found.

The Court: Well, that raises the question whether public injury is enough, without private injury, to use the antitrust laws as a defense. That is the issue.

Mr. Lyon: I think your Honor knows that you don’t even see a cause of action, or a private cause of action, for violation of the antitrust laws, unless you allege, and of course you don’t prove a cause of action unless you prove it.

The Court: I think 49 is a correct statement. In other words, there is no causal connection between 7 and AII and those various exhibits. The only causal connection could have been a conference in Los Angeles, and the introduction of the cheap zipper when they couldn’t secure an agreement on [16] prices. I would be willing to limit it that none of the contracts of the plaintiff * * *

That is true, there could be some injury flowing from the Los Angeles situation, but that plaintiff’s proof failed as to damages.

Mr. Lyon: You mean defendant’s.

The Court: That defendant’s proof failed as to damages. But I wouldn’t want to say there was not any damage coming out of that.

Mr. Mockabee: The way I would set it up in the judgment, it would say: The acts of the plaintiff constituting violation of the antitrust laws which would be the contracts of the price fixing meeting,

or the filing of the suit against the defendant or all of them.

Mr. Lyon: Well, suppose we take it the way I have it: That none of the acts found herein constituting a violation of the antitrust laws of the United States have been shown to have caused injury.

The Court: No. I'm going to give what you have, with that exception on it. Is there any other thing besides the Los Angeles meeting?

Mr. Mockabee: Well, our position was, under Cox versus Dempsey, that the filing of the suit was another step in the scheme—the contracts, the sales meeting, the filing of the suit primarily. [17]

Mr. Lyon: Of course, our position in that regard is that there is no proof that this filing of the suit was so litigated in the first place; and in the second place, Kobe versus Dempsey has been very strongly criticized on that very point. Just last week Judge Tolin refused to follow it in dismissing a counter claim under exactly the same circumstances in a case I tried between the Stauffer and the Slenderella systems.

The Court: Well, word it this way: Take the first two lines of this 49, that none of the acts of the plaintiff found herein to constitute a violation of the antitrust laws of the United States, except the meeting in Los Angeles, the acts and conduct of the meeting in Los Angeles—I'm only stating it roughly—referred to in paragraph 3 of the findings, and the filing and prosecution of this law suit, has

caused injury to the defendant in its business. Put the exception in there.

Now, on your counter claim, are you content merely with the one finding? You don't propose any findings on that counter claim?

Mr. Lyon: Just that finding, that none of the acts * * *, and then I want the conclusion of law to the effect that they haven't proved damage.

The Court: Well, then, take 49 as we have it, and then put another finding of fact in—how do you want to word it? [18] —The fact that the plaintiff's proof on the counter claim failed to prove any causal connection between the alleged—

Mr. Lyon: Well, I have it worded in proposed conclusion of law.

The Court: Well, let's get a finding. It would be something like this: That plaintiff's proof on its counterclaim fails in that there was proved no causal connection between the alleged damage to the defendant and the acts of the plaintiff.

Mr. Lyon: That's fine.

The Court: Have you got that?

Mr. Mockabee: Yes.

Mr. Lyon: I'm going to get a copy of the transcript.

The Court: Will you let him use it to work these findings up?

Mr. Lyon: Sure.

Mr. Mockabee: Thank you.

The Court: I am making that exception on your 49. But even if it were true that there may have been something about the suit and the Los Angeles

meeting, still there was no causal connection proved between the alleged damage to the defendant and the acts of the plaintiff.

Mr. Lyon: That is a conclusion of law or a finding of fact, and I think we ought to put it in both places.

The Court: Well, I wanted it in both places, too. [19] Let's see what we have on the conclusion of law. Before we go into that, however, do you have any objection? Do you want any more specific findings on these patents that have been made?

Mr. Lyon: I have no suggestions to make.

The Court: I take it by that you're content with them; not content with my decision, but you're content with the findings?

Mr. Lyon: No, I won't say that.

The Court: Then in what regard do you want the findings changed?

Mr. Lyon: I don't want them changed. I want them just the way they are, but I'm going to argue to the Court of Appeals that they are wholly inadequate to support the decision.

The Court: In other words, what you want there, according to your language, is to create error in this Court so you can take advantage of it in the Court of Appeals.

Mr. Lyon: It is my understanding of the recent decisions of the Court of Appeals in patent cases that you don't do the Court of Appeals any good unless you tell them what the device is. Anyways these findings wouldn't even tell the Court of Appeals what the machinery is supposed to be all

about, and wherein you find in the prior art this element and that element and so on of the device. It is my understanding that [20] a proper finding would analyze the Poux patent and say what it does. You say that it won't operate, but you don't say why. It is not my business to erect the findings for the defendant, and I think I am entitled to permit the findings to be entered without objection, even though I feel that they won't hold up.

The Court: I want to find out whether you are just objecting to my decision or objecting to the form of these findings. If you are objecting to the form of these findings, then let's find out what those objections are.

Mr. Lyon: I don't object to any of these findings, except the ones I have raised that objection to as not being in accordance with your decision.

The Court: You don't object to any of these findings—say that again.

Mr. Lyon: In other words, it is the province of the attorney in preparing findings to prepare findings in accordance with the court's decision. These findings that Mr. Mockabee has presented are in accordance with your decision.

The Court: Then you are objecting to my decision on the fact that Poux machine wouldn't work and on the fact that there is no infringement of the Silberman and the various other findings, and not to the form of these findings. If you are objecting to my decision on these ultimate objections, that is one thing. If you are going to raise in the Circuit [21] questions as to the sufficiency of the findings,

then I think you should particularize them here. I think you should have done it in writing at the time the matter came to this court. I set aside a morning to settle findings, and your objections, outside of objecting to my decision, are limited to one or two rather specific matters. I'm not going to tell you that you can't, but if you're going to object I want you to object. I, personally, feel that the findings would be better if they were more detailed. But I want you to make your position clear at this time.

Mr. Lyon: I certainly wouldn't propose, for instance, that the court make a finding that the Poux patent was invalid in that it disclosed a machine in which the die and the punch were in the reverse position in order to be operative—I wouldn't suggest that, because I don't believe that is an adequate ground for holding the patent invalid. But I think you do, and if you're going to find it invalid on that ground you ought to say so.

The Court: Well, I think you should then particularize your findings. We are going to have to go back all over this thing and do some work on it, Mr. Mockabee. You'll have to take these general statements you have about the failure of the Poux to work, tell why it won't work in your findings, take your general findings that all the elements found in Silberman were old in the art and list where they are. You can [22] do that with all of these things. I think that is the practice and I think, as Mr. Lyon says, it at least gives the Circuit more help.

Of course, I'm not excusing Mr. Lyon from not objecting to the generality of your findings.

Mr. Moekabee: Well, your Honor, I was trying to follow it as closely as I could what you had in your memorandum.

The Court: Well, a memorandum is not findings. If it had been sufficient for findings, I would have said "Let this be the findings." You should follow the ultimate findings of the court, but you should draw your specific findings of fact in sufficient detail to support those general statements that appear in the memorandum.

Now, this is quite a job.

Mr. Moekabee: I will be glad to do it, your Honor.

The Court: But as I told you before, if this case is properly handled you can win it on appeal.

Mr. Moekabee: I will be glad to amplify it.

The Court: The first step is to get proper findings and conclusions and judgment. If it is properly briefed, this case can be won. But if it is not, the Lyon office will run over this like a steamroller. I have nothing against the Lyon office.

As a matter of fact, you won a pretty good case in my court on the airplane. You didn't have much trouble with that. [23] But I don't always see with you eye to eye. In fact, they didn't even appeal, did they?

Mr. Lyon: No.

The Court: I heard later that the poor guy had a heart attack.

Mr. Lyon: It was not a heart attack. It was a mental——

The Court: Breakdown?

Mr. Lyon: —a nervous disorder.

The Court: Nothing to reflect on the Lyon firm. They do an excellent job. But the point is this. I have slept with this case and I did a lot of work on it and I think it can be won if it is properly handled. If you miss any bets you're going to be in trouble.

So let's get some more done on particularizing those findings. I can tell you generally what they are.

I don't know that 4 has to be particularized.

No. 6 ought to be.

And possibly 7.

8 ought to be a little more particular.

And certainly 9 should be.

10, invalid by prior disclosure—that should be particularized.

11 should be—Silberman contained all elements.

On 12, you have it that you have to prevent the zippers bunching up, but there probably should be descriptive matter [24] on the other ones. In other words, this V-shaped ram, as I remember, there was evidence that that V-shaped ram would not operate at high speeds.

Mr. Mockabee: Yes sir.

The Court: I don't remember now the function of the spring bars on top, but the V-shaped ram D was a very important point in the case, because the Silberman patent had a V-shaped ram, didn't it?

Mr. Mockabee: The spring bars were put in place on a V-shaped ram in exhibit 5.

The Court: 12—13—certainly 14.

Now, you have to do that.

Mr. Mockabee: Yes, your Honor.

The Court: I didn't look through the rest of this, but most of it is right in there.

All right, conclusions of law. Again, you will have to put in the claims and your conclusions don't have to be as specific as the findings.

If you have your findings on this prior art, and your findings did not teach a new method, then your conclusion on number 1 is correct. Do you make the finding that Silberman '793 never operated? If you didn't, there should be one.

Mr. Mockabee: I will check that.

The Court: Because you have it in your conclusions. It is all right to have it in both places. [25]

Mr. Lyon: What is the evidence that shows that—

The Court: Lipson. Well, I think there was various evidence that showed that '793, as such, was never operated. There was one witness that, I think, so testified, but I didn't credit him.

Mr. Mockabee: I don't think he went into any detail as to what machine it was that operated, whether it was a machine like Exhibit 5 or a machine that was patented.

The Court: Well, in making that finding, you probably should state that the court does not credit the testimony of witnesses that '793 operated. I don't think it ever did. Somebody testified that it did. I don't remember who it was now.

Mr. Lyon: There was a bunch of machines down in Mexico that were built by Silberman.

Mr. Mockabee: The plaintiff said that Exhibit 5 was a Silberman machine, and the testimony with regard to some of these other machines doesn't say what machine it was, whether it was that Exhibit 5 type or a '793.

The Court: Well, on conclusion No. 4: Plaintiff purchased '793 subject to existing license from Silberman—that probably is all right as far as it goes, but you ought to have another conclusion of estoppel based both upon Silberman's contract with them and McKee's contract, and that the expenditure money and expanded facilities—you have [26] findings on that, or will have—and that by reason of that there is an estoppel.

Mr. Lyon: He has that in No. 6.

The Court: Is that in 6? Well, then the first line of 6 should be a separate conclusion and the second part of 6: Plaintiff's officer's (McKee's) report that there was no infringement created estoppel—that's not correct. The mere report that there was no infringement doesn't create an estoppel. It is reliance upon his statement. That one on estoppel should be broadened to include the reliance upon Silberman's statement, the reliance on McKee's statement; and in each case the expenditure of money, the expanding of facilities and change of position is what creates the estoppel.

On 7, the license agreements, instead of "agreement," you refer to, either add to 7 or add another conclusion of law, that the plaintiff is, by reason thereof, not entitled to maintain this action for patent infringement.

In the case of your defense of misuse of patents, unclean hands and all prevents plaintiff from recovering on a patent, even if the patent is good and valid and infringed—as a matter of fact, that should be an alternate finding to the effect that even if the claims were good, were valid and were infringed, alternately, that the plaintiffs cannot recover because and so forth.

I don't think No. 8 should be limited to that instance [27] in Los Angeles alone; plaintiff's attempts and so forth in connection with its contracts, conduct and so forth, as found herein.

Well, you have a lot of that in here.

Mr. Mockabee: Yes, further on.

The Court: But 8 shouldn't be there standing alone. I don't know if that's true.

Mr. Mockabee: I have that set forth as a separate conclusion, based upon that one meeting and what they tried to do.

The Court: Well, I want it all tied in together.

Mr. Mockabee: I have a note here for that.

The Court: Now 14 is all right, but you have to go back and check to see whether you have findings of interstate commerce. I suppose there are. You have those findings of 70% and 30%.

Mr. Mockabee: I will make a note to check that.

The Court: You have to have your finding to support that conclusion.

Now, what other conclusions did you want, Mr. Lyon?

Mr. Lyon: I propose a conclusion that——

The Court: What you have got as to 16 here?

Mr. Lyon: That is right.

The Court: All right, put 16 in as a conclusion.

Mr. Lyon: Make a note of that, Mr. Mockabee.

Mr. Mockabee: Yes. [28]

The Court: Now, let's look at the judgment.

Mr. Lyon: Why wouldn't a proper judgment be simply that in view of the foregoing findings of fact and conclusions of law, it is hereby ordered that the complaint herein be dismissed and that the plaintiff take nothing thereby and that the counterclaim herein be dismissed and that the counterclaimant or defendant take nothing thereby. Why recite all these conclusions of law as set forth in the judgment?

The Court: I think if I were drawing the judgment, I would take your 2 and 3—use Findings of Fact, Conclusions of Law, and then Judgment—based upon the findings of fact and conclusions of law, it is hereby adjudged that Claims 1 to 4 and 16 to 17 of the letters patent and so forth are invalid and void and not infringed by the defendant, and that the plaintiff take nothing and the complaint be dismissed.

Add another paragraph: It is adjudged that the defendant take nothing on its counterclaim, and that the complaint be dismissed.

That's your judgment.

And also another paragraph that defendant have and recover from the plaintiff the sum of twenty thousand dollars in attorney fees and its costs and blank them out and that is your judgment.

Is there any objection to that? That's all it takes.

Mr. Mockabee: No. [29]

The Court: The net result of all this, Mr. Clerk, is this: The court directs that the findings of fact, conclusions of law and judgment be re-drawn. [30]

[Endorsed]: Filed Sept. 6, 1957.

PLAINTIFF'S EXHIBIT No. 6

[Title of District Court and Cause.]

DEPOSITION OF PHILIP LIPSON

Deposition of Philip Lipson, taken on behalf of plaintiff at the Offices of Lyon & Lyon, 811 West 7th Street, Los Angeles, California, commencing at 10:00 o'clock a.m., March 18, 1952, before W. E. McClure, a Notary Public within and for the County of Los Angeles and State of California, pursuant to the annexed notice and oral stipulation.

Appearances of Counsel: Evans & McCoy, Ralph E. Meech and Lyon & Lyon, Esqs., by Charles G. Lyon, Esq., and William A. Doble, Esq., for plaintiff. Solomon, Kleinman and Fulwider, Mattingly & Babcock, Esqs., by Robert W. Fulwider, Esq., for defendant. [1*]

Mr. Lyon: This deposition is taken according to a notice, the original of which I hand to the re-

* Page numbers appearing at top of page of Original Deposition.

Plaintiff's Exhibit No. 6—(Continued)
(Deposition of Philip Lipson.)

porter, and it is noted that it was originally scheduled for the 7th day of March, 1952. May it be stipulated it has been regularly continued by oral stipulation to today?

Mr. Fulwider: Yes.

PHILIP LIPSON

having been first duly sworn, deposed and testified as follows:

Direct Examination

Q. (By Mr. Lyon): Mr. Lipson, will you please state your full name? A. Philip Lipson.

Q. Do you understand the nature of the proceedings that are going forward here this morning?

A. Not quite.

Q. Pardon?

A. I am not quite sure about it.

Q. You have never given a deposition before?

A. No.

Q. Well, I will inform you, and your attorney can correct me if I am in any wise in error, that you are called [2] here to testify under oath in answer to questions as I propound them. Your answers will be taken down by the court reporter, and you will be given a chance to read them over and make any corrections that you deem required. You will then sign the deposition, and it will be filed as part of the permanent records of this Court, I mean of the Court at this trial. You are called as an adverse witness, that is, as the Presi-

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

dent of the defendant corporation. I am calling you not as my witness, but as if you were in court on cross-examination. You, of course, will answer the questions fully and truthfully, and you have an opportunity to have your own attorney instruct you not to answer any question that he deems is improper.

Where do you reside, Mr. Lipson?

A. 3206 Rowena, Apartment 4.

Q. What is your present occupation?

A. Manufacturer.

Q. Are you the President of the Union Slide Fastener Company? A. Correct.

Q. Where is that business located?

A. At 1829 Blake Avenue.

Q. How long has that business been located at Blake Avenue? A. Since July, 1950.

Q. Was it previously located on Chandler Boulevard? [3] A. Yes.

Q. What was that address?

A. I believe it is 10731.

Q. When was the Union Slide Fastener Corporation organized, do you know?

A. I was not a member of the corporation when it was incorporated. I believe it was in March, 1947, some time in March.

Q. Do you know who organized that corporation? A. Yes.

Q. Was it Sigmund Loew?

A. Sigmund Loew, I believe so, because I wasn't

Plaintiff's Exhibit No. 6—(Continued)
(Deposition of Philip Lipson.)

President at the time. I think he was one of the charter members.

Q. How long have you been associated with the Union Slide Fastener Company?

A. Since June, 1947.

Q. Who was associated with the company at the time you joined it?

A. Sigmund Loew, his wife Regina Loew and Louis La Med. Do you mean the officers, who were the officers?

Q. That is correct? A. Yes, Louis La Med.

Q. How do you spell that last name?

A. L-a-M-e-d.

Q. Was Morris Waldman associated with the company at [4] that time?

A. Not to my knowledge.

Q. Was he working there?

A. I have seen him there once when I was at the factory prior to my entry. When I got in there he wasn't there.

Q. Isn't it a fact, Mr. Lipson, that at the time you joined the Union Slide Fastener Mr. Waldman was working for the company? A. No.

Q. Isn't it a fact that shortly after you became associated with the Union Slide Fastener Company at your request Mr. Loew terminated Mr. Waldman's employment by the Union Slide Fastener? A. No.

Q. What was your previous occupation before

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

becoming a member of the Union Slide Fastener Corporation? A. I was semi-retired.

Q. Had you engaged in the manufacture of slide fasteners prior to becoming associated with the Union Slide Fastener Company? A. No.

Q. Will you give me the names of the present officers of the Union Slide Fastener Corporation.

A. Well, myself, I am President, Philip Lipson, President, Herbert J. Lipson, Vice-President. [5]

Q. What, if any, relation to you is he?

A. My son, and Edith Lipson, Secretary-Treasurer. Edith Lipson is my wife.

Q. Are those all of the officers you have just named? A. Yes, sir, right.

Q. Are they also the sole shareholders of the corporation? A. Yes.

Q. Mr. Waldman does not hold an office in the corporation? A. No.

Q. He holds no shares of stock in the corporation? A. No.

Q. What is his function at the corporation at present?

A. He is a foreman of the production, for the zipper production.

Q. Do you have any other employees that have a supervisory capacity? A. Yes.

Q. Who are they?

A. In my machine shop I have a man, Fred Taberlet.

Q. Does your company, that is, Union Slide

Plaintiff's Exhibit No. 6—(Continued)
(Deposition of Philip Lipson.)

Fastener Company, employ machines for manufacturing slide fastener stringers, namely, chain machines, as they are known in the trade?

A. You mean—what do you mean by “employ?”

Q. Use. A. Whether we use? Yes.

Q. At the present time are your machines of that type single or double-head machines?

A. Double-head machines.

Q. At any time during the time you were associated with the company did they have the single-head machines?

A. They had, and they still have them, but they were not in use.

Q. Now, referring to the double-head machines, who designed those machines?

A. I don't know.

Q. Who built the machines?

A. I also don't know.

Q. Were they built while you were there?

A. No.

Q. Now, may the——

A. I want to ask you a question. When you say “they were built,” the original machine was already built when I joined the company.

Q. But subsequently other machines were built?

A. Correct.

Q. And you built them; isn't that right?

A. That's right.

Q. We have supplied to you prior to the taking of this deposition a blueprint. I will show you a

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

blue line [7] print, and ask you if you recognize this as a copy of the drawing which was given to you to study approximately a week or ten days ago?

A. No, I didn't receive one a week or ten days ago.

Mr. Fulwider: It was authorized then. We got a print I think about Thursday, and I finally gave it to him yesterday.

Q. (By Mr. Lyon): I will ask you then if you recognize it as a print, a copy of which was given to you yesterday or some time previous to today?

A. I recognize it as a print, but whether it is an exact copy or another one, I don't know. It looks similar, but whether it is the same, I don't know, similar to the one that I was studying. I only looked at it yesterday.

Q. You have had a chance to study a print that generally resembles this print; is that correct?

Mr. Fulwider: I will say, Mr. Lyon, if you will state for the record that it is a duplicate we will so stipulate.

Mr. Lyon: It is a blue line print of the same drawing.

The Witness: Whether the details are the same I can't tell at a glance. I mean it looks like the one that I studied.

Q. (By Mr. Lyon): Now, Mr. Lipson, some time in September of 1951, I believe it was, do you recall a visit that was made at the plant of the

Plaintiff's Exhibit No. 6—(Continued)
(Deposition of Philip Lipson.)

Union Slide Fastener in Los Angeles, [8] at which time there was present Mr. Ward Robinson, Mr. Ralph Meech, both of the Talon Company, myself, Mr. William Doble, who is present here in the room, and Mr. Jim Oswald, together with a photographer?

A. Yes, it was some time in September.

Q. That is right. At that time you showed to us, did you not, a number of blueprints which you had in your possession. A. Yes.

Q. Later you supplied copies of those blueprints to me, did you not? A. I did.

Q. At that time did you tell me that those were the blueprints which represented the parts and the assembly of the double-headed zipper machines which you were using at the Union Slide Fastener?

A. No, only some of them. I said some of them were obsolete, and I didn't have newer drawings.

Mr. Lyon: I will show you a roll of blueprints, and I will ask the Notary if he will mark this one as Plaintiff's Exhibit 1.

(Blueprint referred to was marked by the Notary Public as Plaintiff's Exhibit 1, and is hereto attached.)

Q. (By Mr. Lyon): I ask you if you recognize this as one of the blueprints originating with your company which you [9] gave to me as a result of that inspection of your plant?

A. I believe so.

Q. Will you tell me what is shown on that blue-

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

print, and whether or not it shows the parts of the zipper-making machines as in use at the Union Slide Fastener? A. Not all of them.

Q. It shows some of them, however; is that correct?

A. It shows some, because changes were made after that. This is a blueprint that was made by one of our employees, and he was not a professional draftsman. He did the best he could—there are a lot of errors in this blueprint. When I gave it to you I stated so.

Q. Well, I note a date on it 12/28/48.

A. Yes.

Q. As of that date, which I take it to be the 28th day of December, 1948, did the machines at Union Slide Fastener generally correspond with the parts shown on this drawing, Exhibit 1?

A. I wouldn't know offhand unless I studied it, because this blueprint was not made under my supervision. It was done by an inexperienced draftsman.

Q. I show you another print entitled "Main Housing Assembly," and it bears the date "6/20/50, drawn by J. H. P., checked by P. Lipson." That would be you? A. Yes.

Q. I ask you if you can identify that print as one [10] of the prints you gave to me.

A. Yes.

Q. Does that print accurately show the main

Plaintiff's Exhibit No. 6—(Continued)
(Deposition of Philip Lipson.)

housing assembly of the zipper machines as employed by Union Slide Fastener?

Mr. Fulwider: Has it been marked Exhibit 2?

Mr. Lyon: I will have it marked. We will offer that print, and the first one will be offered in evidence as Plaintiff's Exhibit 1 to these depositions, and the second one as Plaintiff's Exhibit 2.

(Blueprint last referred to was marked by the Notary Public as Plaintiff's Exhibit 2, and is hereto attached.)

Q. (By Mr. Lyon): I will show you another blueprint entitled "Left End Assembly," dated "6/22/50, drawn by J. H. P., checked by P. Lipson," which I presume is yourself; is that correct?

A. Yes, sir.

Q. I ask you if you recognize that as one of the prints you gave me, and does that correctly illustrate the left end assembly of the slide fastener machines as employed at that date by the Union Slide Fastener?

A. Yes, there is a resemblance.

Q. By "that date" I mean June 22nd, 1950.

A. Yes.

Mr. Lyon: That print, as identified by the witness, [11] will be offered as Plaintiff's Exhibit 3 to these depositions.

(Print referred to was marked by the Notary Public as Plaintiff's Exhibit 3, and is hereto attached.)

Q. (By Mr. Lyon): I show you another print

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

entitled "Union Slide Fastener, Inc., No. 11-3 Shearing Punch," and ask you if you can identify that as one of the drawings which you have supplied to me, and as illustrative of the shearing punch as employed by the machines for making zippers at Union Slide Fastener? A. Yes.

Q. That drawing was made by you; is that correct? A. That's right.

Q. On May 22nd, 1950? A. Yes.

Q. And illustrating the shearing punch in use as of that time? A. That's right.

Mr. Lyon: That drawing will be offered as Plaintiff's Exhibit 4.

(Drawing referred to was marked by the Notary Public as Plaintiff's Exhibit 4, and is hereto attached.)

Q. (By Mr. Lyon): I show you another drawing entitled "Union Slide Fastener, Inc., No. 18-3, Right and Left Notching [12] Dies," and ask you if that is not a drawing made by you, it has your name on it, dated May 23rd, 1950, and if it is not a drawing illustrating the right and left notching dies as employed by the Union Slide Fastener as of that date? A. Yes.

Mr. Lyon: That will be offered as Plaintiff's Exhibit 5.

(Drawing referred to was marked by the Notary Public as Plaintiff's Exhibit 5, and is hereto attached.)

Q. (By Mr. Lyon): I show you another draw-

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

ing entitled "Union Slide Fastener, Inc., 17-3, Shearing Die." I do not see a date on it. I ask you if that is another drawing made by you, bearing your name, and illustrating the shearing die of the slide fastener manufacturing machines employed by Union Slide Fastener? A. Yes.

Mr. Lyon: That will be offered as Plaintiff's Exhibit 6.

(Drawing referred to was marked by the Notary Public as Plaintiff's Exhibit 6, and is hereto attached.)

Q. (By Mr. Lyon): I show you another drawing entitled "Union Slide Fastener, No. 281, Main Eccenter Shaft," and ask if that is not a drawing supplied to me by you, which was made by you, bearing your name, and correctly illustrating [13] the main eccenter shaft of the slide fastener stringer machines employed by Union Slide Fastener?

A. I know this drawing was made by me, but whether or not I had supplied it to you, I have to look at my records. I don't recall that.

A. Well, I ask if it correctly illustrates the machines?

A. I think, to the best of my knowledge, yes.

Mr. Lyon: I will state, for the record, that all of these blueprints which I am now identifying are your prints.

The Witness: I know. I will identify them all, but a number of them I don't recall whether I gave

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

them to you or not. I will have to look at my records.

Mr. Lyon: The drawing just identified will be offered as Plaintiff's Exhibit 7.

(Drawing referred to was marked by the Notary Public as Plaintiff's Exhibit 7, and is hereto attached.)

Q. (By Mr. Lyon): I show you another drawing entitled "Ram Block, U. S. 41," and ask if that is not a drawing made by you, bearing your name, and showing the ram block as employed on or about June 15th, 1950, by the Union Slide Fastener in the machines employed for manufacturing zip-pers?

A. This drawing was not made by me.

Q. It was checked by you? A. Right. [14]

Q. Who is J. H. P.?

A. A former employee of mine.

Q. Now, this drawing which you have just identified, is that illustrative of the ram block in the stringer manufacturing machines employed by Union Slide Fastener on or about June 15th of 1950?

A. Yes. I guess so.

Mr. Lyon: That drawing will be offered as Plaintiff's Exhibit 8.

(Drawing referred to was marked by the Notary Public as Plaintiff's Exhibit 8, and is hereto attached.)

Q. (By Mr. Lyon): I show you another drawing entitled "Punch Holder" bearing the date of

Plaintiff's Exhibit No. 6—(Continued)
(Deposition of Philip Lipson.)

5/7/50, and having the notation "Checked by P. Lipson," and ask if that drawing is a drawing correctly illustrating the punch holder employed in the stringer manufacturing machines on or about May 7th, 1950, by Union Slide Fastener?

A. There is no date on this, so I couldn't tell exactly when it was made. 5/7/50?

Q. Can you answer the question as to whether or not that illustrates the punch holder as employed by Union Slide Fastener on or about that date? A. Yes.

Mr. Lyon: That drawing just identified by the witness is offered as Plaintiff's Exhibit 9. [15]

(Drawing referred to was marked by the Notary Public as Plaintiff's Exhibit 9, and is hereto attached.)

Q. (By Mr. Lyon): I show you another drawing entitled "Stripper," dated September 5, 1947, and ask you if you can identify that?

A. As what?

Q. Pardon? A. As what?

Q. Well, do you recognize it, do you know what it is?

A. It looks like the stripper. Whether it is the real thing I don't know, because that wasn't—that drawing wasn't made by me. It wasn't checked by me.

Q. That is one of the drawings, however, that was supplied by you to me, is it not?

A. Well, at the time I stated to you that some

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

of those drawings were not new ones. They were drawings that were laying around, and whether they are correct or not I cannot say, because they were not made by me, neither were they checked by me.

Q. So far as you can tell by inspection, however, it is generally illustrative of the stripper employed by the machines at Union Slide Fastener?

A. No, there are some things that are not exactly like the ones that we are using.

Q. For instance? [16]

A. The angle and the radinses do not correspond.

Q. Well, leaving aside for the moment the questions of angles and dimensions, could you say fairly that the drawing is generally illustrative of the machine currently in use at Union Slide Fastener? A. What machine?

Q. Of this part of the machine.

A. It resembles it slightly.

Mr. Lyon: The drawing just identified by the witness is offered as Plaintiff's Exhibit 10.

(Drawing referred to was marked by the Notary Public as Plaintiff's Exhibit 10, and is hereto attached.)

Q. (By Mr. Lyon): I show you a drawing entitled "Plate for Housing," dated September 5th, 1947, and ask you if that is another one of the drawings you supplied to me and, leaving aside the question of angles and dimensions, if it is not

Plaintiff's Exhibit No. 6—(Continued)
(Deposition of Philip Lipson.)

generally illustrative of the plate for the housing of the stripper manufacturing machines employed by Union Slide Fastener?

A. Let me get that question again.

Mr. Fulwider: He had quite a lot in it.

(The question was read by the reporter.)

The Witness: It resembles a part that we were using at one time. I do not recall whether it was that time or not. [17]

Mr. Lyon: That drawing is offered as Plaintiff's Exhibit 11.

(Drawing referred to was marked by the Notary Public as Plaintiff's Exhibit 11, and is hereto attached.)

Q. (By Mr. Lyon): I hand you one more blueprint, Mr. Lipson, entitled "Male." It does not seem to have a date on it; I ask you if you do not recognize that as generally similar to the punch used in forming the upset portion of the elements in the machines employed at Union Slide Fastener?

A. I don't understand the question, what do you mean by "upset."

Q. Well, the hook, what do you call the portion of a zipper element which is pushed up from the rest of the material in forming the element?

A. What we call it?

Q. Yes, what do you call it?

A. We call it the tit.

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

Q. Just substitute "tit" for "upset portion" in my question. I will reframe the question.

I ask you if you do not recognize that as a drawing representative of the punch which formed the tit of the zipper elements as employed by Union Slide Fastener?

A. It looks similar, but this drawing, when I handed it to you I told you it was an obsolete drawing. It wasn't [18] made by me, and it is the best one I had and I gave it to you.

Mr. Lyon: That drawing is offered as Plaintiff's Exhibit 12.

(Drawing referred to was marked by the Notary Public as Plaintiff's Exhibit 12, and is hereto attached.)

Q. (By Mr. Lyon): At the time we visited your plant, you will recall that was September 7th, 1951, and you will recall we had a photographer present.

A. I guess so, he had photographer's apparatus, but whether he was one I don't know. I don't know the man.

Q. I am going to hand you 12 photographs, showing a zipper manufacturing machine, and ask you if you do not recognize those as photographs that were taken of your machine on September 12th, 1951, and if you do not further recognize this series of photographs as being copies of those which I gave you some time in the fall of 1951.

A. I couldn't be sure about that, because I have

Plaintiff's Exhibit No. 6—(Continued)
(Deposition of Philip Lipson.)

those photographs. I have never examined them. They are just laying around. I just got a few.

Q. I see.

A. Whether this is our machine or not I couldn't tell.

Q. Will you examine the photographs and tell me if you do not recognize your machine in those photographs?

A. There is a resemblance, but whether it is ours or [19] not I couldn't tell. I mean I can't tell whether that is an accurate photograph or not.

Q. It is going to take a long time, because I am going to ask you to show me in the photograph I am handing you now——

A. Yes.

Q. Can you see any element in that picture which you can recognize as not belonging to one of your machines?

A. Well, how can I tell that, as not belonging? Will you repeat the question again? I don't quite get it.

Mr. Fulwider: Mr. Lyon, as far as I am concerned, if you make a statement for the record that these are prints made by the photographer——

Mr. Lyon: That is correct.

Mr. Fulwider: ——of Mr. Lipson's machine, that we will be willing to stipulate that.

Mr. Lyon: I will stipulate to that, and I will make the statement that Meriman Photo Art were hired by me to go out and take these pictures, and

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

they made them, and copies of them were given to Mr. Lipson.

Mr. Fulwider: And these are another set of the prints, the same as you gave Mr. Lipson?

Mr. Lyon: That is correct.

Mr. Fulwider: That is satisfactory. That will save a lot of time. Have you got your set?

The Witness: I don't know whether they are all the [20] photographs. I got some of them.

Mr. Lyon: He got a full set of everything.

The Witness: A full set of them?

Mr. Lyon: Yes.

The Witness: How many are there supposed to be?

Mr. Lyon: There are supposed to be 12, but we will sure find out, because they are going into evidence.

Mr. Fulwider: You might let us have an extra set of them, if you can.

Mr. Lyon: We had an extra set, and Mr. Doble left them in Cleveland about a month ago.

The photographs concerning which we have just stipulated, the set of photographs which are numbered consecutively 5674-A through L are offered as Plaintiff's Exhibits 13-A through L respectively.

(Photographs referred to were marked by the Notary Public as Plaintiff's Exhibits 13-A through L respectively, and are hereto attached.)

Mr. Lyon: For your information, I turned these

Plaintiff's Exhibit No. 6—(Continued)
(Deposition of Philip Lipson.)

drawings and these photographs over to Jim Oswald, who accompanied us to the plant and took dimensions from the machines themselves, and Jim Oswald then proceeded to make this drawing as illustrative of the machines, and I am wondering if we can have a stipulation subject to correction, if on further study by Mr. Lipson he should find any discrepancy, that [21] this drawing accurately and truly depicts the slide fastener machines in use by Union Slide Fastener.

Mr. Fulwider: Let me ask Mr. Lipson a question first off the record.

(A discussion was had off the record.)

Mr. Fulwider: We will stipulate as Mr. Lyon suggested, with the further agreement that the parties will collaborate to try and make Exhibit 14—I guess it will be 14——

Mr. Lyon: It will be 14.

Mr. Fulwider: ——Exhibit 14 a correct portrayal.

Mr. Lyon: With that stipulation I will offer the print entitled "Zipper Machine—Union Slide Fastener" as Plaintiff's Exhibit 14 to this deposition.

(Print referred to was marked by the Notary Public as Plaintiff's Exhibit 14, and is hereto attached.)

Q. (By Mr. Lyon): Now, Mr. Lipson, those machines that you have out at Union Slide Fastener for manufacturing slide fastener stringers,

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

They take a strip of uniform metal and form the slide fastener elements from it, don't they?

A. Yes.

Q. And they take a tape, fabric tape, and they attach the elements to the fabric tape; is that correct? A. Correct.

Q. Now, you used double-headed machines, that is, machines that make two individual stringers at the same [22] time; is that correct?

A. They can. I do not always use them in that way.

Q. Generally you do, correct?

A. Sometimes we make double and sometimes we make single stringers.

Q. Now, in forming these elements, attaching them to the tape, you feed a strip of metal intermittently through the machine, don't you?

A. Yes, I guess so.

Q. At the very end of that strip of metal, if you stop the machine there would be a pair of jaws formed at the end of the metal, which pair of jaws were formed by the preceding cutting away of an element; is that correct?

A. Well, please clarify that. Will you repeat that, please?

(The question was read by the reporter.)

The Witness: There is one question there. I don't quite understand what you mean by "stopping a machine." It depends at what point.

Plaintiff's Exhibit No. 6—(Continued)
(Deposition of Philip Lipson.)

Q. (By Mr. Lyon): Well, if at any time you stop the machine in order to look at it—

A. Yes.

Q. —there would be a strip of metal in the machine and it would have a pair of legs cut out on the end of the material, would it not?

Mr. Fulwider: A leading edge, you might say.

Q. (By Mr. Lyon): On the leading edge.

A. Yes, yes.

Q. Now, those jaws would have been formed by removing the intervening material between them as you cut off the element that has just been formed; is that correct? A. No.

Q. How is it incorrect? In what manner is it incorrect?

A. We will not remove any intervening material.

Q. When you sever an element—

A. Yes.

Q. —from the end of the strip and attach that element to the tape— A. Yes.

Q. —you leave the end of the strip with jaws formed thereon, don't you? A. Yes.

Q. Those jaws are formed by the removal of the material that goes to make up the element that has just been attached to the tape; is that correct?

A. By removing some of it, removing the previous element.

Q. That is right, and part of that previous ele-

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

ment was material that was intervening between those jaws; right?

A. A part of the jaws—the element was a part of the jaws. There is no intervening material except the [24] element.

Q. In the manufacture of these stringers, when you have a strip with the jaws formed on the end of the strip, that strip is then advanced to place the jaws astraddle the tape; is that correct?

A. I didn't follow you through. Will you read that? It is quite involved, and I want to make clear what the question is.

Mr. Lyon: Will you read it.

(The question was read by the reporter.)

The Witness: Yes.

Q. (By Mr. Lyon): Then the jaws are clamped to the tape, are they not? A. Yes.

Q. Then you sever that particular element from the strip; is that correct?

A. I do not quite understand the question. You follow it after we close the jaws—there is some point in there—you asked me the question after we close the jaws. We don't sever it after we close the jaws.

Q. When do you sever it?

A. Simultaneously.

Q. Simultaneously with the closing of the jaws on the tape; is that correct? A. Correct.

Q. So then in your machine there is at least partial [25] contact of the strip by the severing

Plaintiff's Exhibit No. 6—(Continued)
(Deposition of Philip Lipson.)

die at the same time that the closing jaws close the legs to the tape; is that correct?

A. Partial contact, you say, on what?

Mr. Lyon: I will strike the question.

Q. During the closing of the jaws to the tape and the severing of the element from the strip—

A. Yes.

Q. —there is at least one period of time when the severing punch and the closing jaws are both simultaneously working on the element; is that correct? A. Yes, I guess so.

Q. Now, that strip moves in a straight line across the machine, does it not?

A. Across which way?

Q. As it approaches the punch the metallic strip moves in a straight line across the machine, does it not?

Mr. Fulwider: You mean horizontally?

Q. (By Mr. Lyon): Yes.

A. Well, then it all depends—it moves horizontally.

Q. It follows a fixed path as it approaches the punch, does it not? A. Yes, we hope so.

Q. At the same time the fabric strip is following a fixed path at right angles to the path of the strip; is it not? [26]

A. At right angles which way?

Q. Well, the strip is moving horizontally and the tape is moving vertically; isn't that correct?

A. Correct.

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

Q. They intersect, the path of the two of them intersects, does it not? A. Yes.

Q. And they both move intermittently?

A. Yes.

Q. The purpose of having the tape intersect the strip is to so position the tape so that as the strip moves intermittently forward it places the jaws of the element astraddle the tape; is that correct?

A. Please clarify that. Will you clarify that question, please?

Mr. Lyon: Well, read it.

(The question was read by the reporter.)

The Witness: Correct.

Q. (By Mr. Lyon): Neither the tape nor the strip ever backs up in your machine, do they?

A. Will you repeat that, please?

Mr. Lyon: I will rephrase the question. Maybe you will understand it.

The Witness: Yes.

Q. (By Mr. Lyon): In each case the movement is intermittent, but it is forward, it never has a reverse movement [27] so that either the tape or the strip moves back to where it was before it is stepped forward?

A. In the normal operation of the machine?

Q. That is correct. A. No.

Q. Now, do you understand what I mean when I say that in your machine there is an attaching station where the elements are attached to the tape?

A. Well, I don't know whether you would phrase it station or step or any other thing. There

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

are various names for it. Will you clarify it, please?

Q. Let us take the portion of your machine where the legs are clamped to the tape. You know where that is? A. Yes.

Q. Let us call that the attaching station. Do your machines have within a space of less than an inch from the attaching station means for performing all of the operations on that strip that are necessary to form a slide fastener element?

A. I couldn't tell that without looking at the drawings, without knowing that, whether it is less than an inch or more than an inch. I couldn't say that offhand.

Q. You do have in your machine closing jaws that close the legs of the element to the tape; that is correct? A. Yes.

Q. And just as close as you can get to those closing [28] jaws you have a punch that severs the element from the strip, do you not? A. Yes.

Q. Right adjacent to that you have a punch that makes the notches in the sides of the strip to make a square element; is that correct?

A. What do you mean by "adjacent?"

Q. Right next to it.

A. There is a punch?

Q. Yes. A. Yes, there is.

Q. Right next to that punch you have a die that cooperates with the punch on the base of the machine for forming the tits, do you not?

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

A. That question is not clear, when you say "right next to it."

Q. Touching it. A. When?

Q. When the machines is in use.

A. I do not understand your question. Will you repeat that, please?

Mr. Lyon: I will strike the question.

Q. You have a punch holder, don't you, or a tool holder in the ram? A. Yes.

Q. In that tool holder you have first a severing [29] punch working from what I have called the attaching station towards the other end of the machine. You have first a severing punch, you then have a punch that puts the two notches on each side of the strip, and you then have a die for forming the tit, and all of those are touching each other in one unitary assembly at that station, are they not?

A. No.

Q. I call your attention to the photograph, Exhibit 13-I, and ask you if you do not recognize that as the ram with the punching and forming tools being carried thereby which you employ at Union Slide Fastener?

A. This photograph is not very clear, to be able to state whether this is the punches and—that are put together. It is not clear there. There is a lot of shade and I can't distinguish.

Q. Well, I will show you 13-A, and ask you if you can do any better on that.

Plaintiff's Exhibit No. 6—(Continued)
(Deposition of Philip Lipson.)

A. This resembles the arrangement that we have.

Q. In that Exhibit 13-A there are at two stations an assembly of tools, are there not?

A. How was that?

Q. There are, as I am indicating here, an assembly of tools and there is a duplicate assembly over here, are there not? A. Yes.

Q. Now, in that assembly, starting from the top and [30] working down, the first tool is the tool for severing the element from the strip; is that correct? A. I think so.

Q. Right underneath that you find a tool for putting the notches on the side of the strip; isn't that correct? A. No.

Q. What is the next tool there?

A. This looks like it is one tool. It is not two separate tools.

Q. They are formed as one tool? Then instead of being a separate severing tool and a separate notching tool, they are all made of one piece; is that correct? A. Yes.

Q. And they are right together there?

A. Yes.

Q. The next thing we find is this tit-forming tool; is that correct? A. Yes.

Q. Is that all one piece, too? A. Yes.

Q. All together? A. No, no, no.

Q. That is a separate piece?

A. A separate piece.

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

Q. From the severing and notching tools; is that correct? [31]

A. Correct.

Q. But it is right up against it there, is it not?

A. Yes.

Q. In those machines can you tell me the distance from the tit-forming tool and the severing tool?

A. I don't follow your question. Just what do you mean?

Q. You have identified in this photograph this tit-forming tool here? A. Yes.

Q. And this severing tool here? A. Yes.

Q. Can you tell me approximately what the distance from here to here is on those two tools?

A. I wouldn't know offhand.

Q. Could you give it to me in an approximation?

A. I would have to figure that out. I don't recall exactly. I don't want to be wrong on the answer. It would have to be measured before I could.

Q. If they are going to be made the same size as you have got them made they couldn't be any closer together, could they?

A. Just what do you mean by "closer together"?

Q. Well, they are already touching each other, aren't they? A. Of course they are. [32]

Q. And you certainly could not get them in any closer contact, could you?

A. The two punches you are talking about?

Q. Yes.

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

A. Yes, they are close together.

Q. Again referring to Exhibit 13-A, that generally shows a ram, does it not?

A. There is some foreign part in here which makes it that it does not resemble mine.

Q. What is that?

A. My ram does not have this part here (indicating).

Q. Are you referring to apparently a piece of metal that was placed underneath that ram to tilt it up so that the photographer could get it at the proper angle? Is that what you are referring to?

A. It looks like it is a part of it. It is a piece of metal. It looks like a part of it.

Q. That is what it is.

A. It looks like a machine part.

Q. It is what we found in your plant and we used to prop up the machine. In referring to Exhibit 13-A, I will make a notation on the photograph in pencil, leading to a block of metal, and ask you if it is not a fact that that block of metal I have marked with a lead line and the figure A is a block of metal that is not a part of the ram.

A. Just what was the question, please? [33]

(The question was read by the reporter.)

The Witness: I wouldn't know.

Q. (By Mr. Lyon): Don't you know what is in your ram?

A. In our ram, this isn't a part of it.

Q. That is what I asked you, and by "this"

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

you mean the block of metal I have indicated as "A" in Exhibit 13-A? A. That is right.

Q. But your machines do have a ram as depicted in Exhibit 13-A; is that correct?

A. It resembles it. I don't know whether that is exactly the same or not. It resembles it.

Q. Well, now, we are either going to determine what you have in your machines or we are not going to. If you are not going to accept the stipulation that your counsel made that subject to any corrections or discrepancies which you may later find, these drawings and these photographs show your machines, we are going to be here all day, because if you say that resembles your ram, and you are not willing to unqualifiedly state that it is your ram I am going to ask you to point out in detail any difference between that photograph and the ram which you installed in this machine on September 7th, 1951, when we took the picture.

Mr. Fulwider: Well, I think you are right. We stipulated that based on your statement the photographs were photographs of Mr. Lipson's or the Union Slide Fastener ram. If you see anything in this photograph that appears [34] to you not to be in your ram or to indicate to you that the photograph is in error you can point it out. There are many things there that are not clear, and I think that is what the witness had in mind. He can't see **everything in the photograph.**

The Witness: The photo is taken at an angle,

Plaintiff's Exhibit No. 6—(Continued)
(Deposition of Philip Lipson.)

and it has various shades in it, and I couldn't truthfully say it is exactly the same. I say it resembles. I cannot say—sometimes photos are taken at an angle where you cannot decide whether those other shades are off here, and I can't truthfully say that it is a photograph of the ram I am using. I say it resembles it.

Q. (By Mr. Lyon): Take Exhibit 13-A together with 13-I, there are two different angles of the same ram, and can you state whether or not those photographs show the ram as employed by Union Slide Fastener in its zipper-making machines?

A. This one resembles the other. It is a little clearer than the other one, but I cannot truthfully say that it is it.

Mr. Fulwider: Let us put it this way: so far as you can see it seems to accurately portray it, but you cannot guarantee it?

The Witness: That is right. Photographs are taken at certain angles.

Q. (By Mr. Lyon): Those machines do have a ram, do they [35] not?

A. We call it a ram block.

Q. And they have a base? A. Yes.

Q. In operation that ram reciprocates up and down with respect to the base, doesn't it?

A. Correct.

Q. In those machines a strip of metal is fed into and through the machine between the ram and the base, is there not?

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

A. No, it is not fed in between the ram and the base.

Q. Well, the strip is sent over the top of the base is it not? A. Over the top of the base?

Q. Yes.

A. No, we don't consider it that way.

Q. Well, the strip is lying on the base, is it not?

A. No.

Q. Is it down in the base somewhere?

A. That is right.

Q. The ram is up above that, is it not?

A. Yes.

Q. So is it not the accurate thing to say that the strip is between the ram and the base?

A. I wouldn't say so.

Q. But the ram is above and the base is below?

A. That's right.

Mr. Fulwider: A portion of the base is below.

Q. (By Mr. Lyon): Is there means in your machines, carried by the ram and by the base and actuated entirely by the movements of the ram, for forming the elements, including the legs at the end of the strip?

A. Will you clarify that? What do you mean by that? I am not an attorney, and I don't know what you mean.

Q. In your machines the punch elements are carried entirely by the ram; right?

A. Not exactly.

Q. Well, the tools that we see mounted in Ex-

Plaintiff's Exhibit No. 6—(Continued)
(Deposition of Philip Lipson.)

hibits 13-A and 13-I are carried entirely by the ram, aren't they? They move with the ram.

A. Which is 13?

Q. You have them right in front of you.

A. Those two?

Q. Yes.

A. There are two punches that are carried by the ram.

Q. That is right. And those are the punches for forming the elements and cutting them off, are they not?

A. They do part of the work, but they don't do all the work.

Q. What you are reserving in your mind when you answer that question is that there are dies and cooperative [37] parts mounted in the base that cooperate with the punch elements carried by the ram; is that what you have in mind?

A. Correct.

Q. That ram carries a cutting off tool for cutting off the endmost element, and it also carries a pair of cams which engage some clamping elements for clamping the legs of the element to the tape; isn't that correct?

A. Not quite. The question is not clear to me.

Mr. Lyon: Will you read the question, Mr. McClure.

(The question was read by the reporter.)

The Witness: Yes.

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

Q. (By Mr. Lyon): Those elements are a pair of jaws that are mounted on the base, those clamping elements; right? A. Yes.

Mr. Fulwider: I didn't understand that. The jaws——

Mr. Lyon: Well, in a preceding question I referred to a clamping element. This question asks him if the clamping element is not a pair of jaws mounted on the base, and he said "Yes."

Mr. Fulwider: That is, the clamping element, do you refer to clamping the legs of the element?

Mr. Lyon: That is correct.

Mr. Fulwider: You have got a couple of elements there. You got me a little confused.

Q. (By Mr. Lyon): Those jaws are disposed to either side of the tape and move towards each other for engaging and [38] closing the legs of the element on the tape; is that correct?

A. I think so.

Q. Those jaws are actuated by being engaged by cams which have cam faces on them, which cams are mounted upon the ram; is that correct?

A. Just what do you mean "cam faces"? I don't understand that question.

Q. This edge, this beveled edge right there on the cam.

A. That is part of the cam, that is not a face.

Mr. Lyon: We will reframe the question.

Q. There are mounted on the ram cams. The cams have faces. There are formed upon the jaws

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

cooperating faces which engage the cam faces on the cams mounted on the ram, so that on downward movement of the ram the cams drive the jaws into engagement with the legs of the element and attach the element to the tape; is that correct?

A. Just what do you call "faces"? I don't understand.

Q. The working face of the cam, the part that engages the cooperative face.

A. That is not called a face. That is called an angle, a cam angle. That is why I don't know what you mean by "face." It describes it in such a way that it is not clear to me.

Q. I will rephrase it then, and instead of "face" we will use "cam angle." [39] A. Yes.

Q. There are cams carried by the ram, those cams have cam angles. There are jaws mounted on the base. Those jaws have cam angles which are engaged by the cam angles on the cams on the ram; right? Is that right?

A. I don't quite understand it. You have it involved—will you split the question up a little bit? I can't follow you. You are an attorney. You don't realize that I am not.

Q. I will give it to you very slowly.

A. Yes.

Mr. Fulwider: Give it to him part by part.

Q. (By Mr. Lyon): Starting out, you have a ram; right? A. Yes.

Q. The ram carries cams; right?

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

A. The cams are attached to the ram.

Q. The cams have cam angles? A. Yes.

Q. Correct? A. Yes.

Q. Now, you have jaws; correct? A. Yes.

Q. Those jaws are mounted on the base; right?

A. Yes.

Q. Those jaws also have cam angles; right?

A. They have angles. [40]

Q. The angles on the jaws cooperate with or are engaged by the cam angles on the cams; right?

A. Correct.

Q. So that on downward movement of the ram the jaws are driven into engagement with the legs of the element, and the legs are clamped to the tape; is that correct? A. I guess so.

Q. Your machine has a shaft, does it not?

A. Oh, it has more than one shaft.

Q. It has one that you call the main eccentric shaft; is that right? A. Yes.

Q. That is the subject of the blueprint which has been identified here as Plaintiff's Exhibit 7; is that correct? I will show you Plaintiff's Exhibit 7.

A. Yes, that is the eccentric shaft.

Q. That shaft is carried by the base; is that right? A. It is mounted in the base.

Q. Mounted in the base? A. Yes, sir.

Q. That ram is driven from the main eccentric shaft, is it not? A. It is driven what?

Q. Driven from that shaft; is that correct?

A. Driven by the shaft?

Plaintiff's Exhibit No. 6—(Continued)
(Deposition of Philip Lipson.)

Q. That is right. [41] A. Yes.

Q. There is a pair of connecting rods between the eccentric shaft and the ram; is that correct?

A. Yes.

Q. They drive the ram; is that correct?

A. Yes, sir.

Q. I wonder if you could give me some idea of the degree of eccentricity of the eccentrics on that main eccentric shaft?

A. They are marked on the drawing.

Q. Where? A. Right here.

Q. What would that indicate the eccentricity of that eccentric to be?

A. I guess I forgot to put it down. I made the drawing myself. I forgot to put it on.

Q. What should it be?

A. That is approximately one eighth of an inch, the drive is one eighth of an inch.

Q. That is the total travel of the ram?

A. That's right, that would be a sixteenth of an inch eccentricity.

Q. Would you call that a large or a small degree of eccentricity?

A. Well, that is rather hard to say. It depends on what point of view you are looking at it. [42]

Mr. Fulwider: That is right.

The Witness: From the point of view of a jeweler it is large, from the point of view of a forging hammer it is small.

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

Q. (By Mr. Lyon): This base in your machine carries a die block, does it not?

A. The base carries what?

Q. A die block.

A. What would you—will you describe what you mean by “a die block”?

Q. You have pointed out on Exhibit 13-A and 13-I—

A. Yes.

Q. —some tools carried by the ram?

A. Yes.

Q. There are some cooperative tools mounted in the base; isn't that correct?

A. Yes.

Q. Don't we generally call the type of tools that are mounted in the base dies?

A. Yes.

Q. They cooperate with the punches in the ram; is that correct?

A. Yes.

Q. Those dies that are mounted in the base are tied together in a unitary assembly in which they are mounted, are they not? [43]

A. Yes.

Q. Let us call that unitary assembly a die block.

A. We call it a die housing.

Q. All right, then we have a die housing mounted in the base?

A. Yes.

Q. And it has some dies mounted in the housing; right?

A. Yes.

Q. I think you have previously identified the severing tool and the tit-forming punch carried by the ram; right?

A. Yes, I say they resemble those that I use.

Q. Now, calling your attention to Plaintiff's Ex-

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

hibit 13-H, which I believe we have a stipulation shows your machine, and looking at the photograph, as you are, there are two sides of the machine, the one that is readily seen in the picture and the one on the back which is not seen. Let us call the side of the machine shown in the photograph 13-H the front side of the machine. Can you tell me: are the tools, the die block, the punch, the cut-off tool arranged on the front side of the machine so that they are readily accessible from the front side of the machine? A. It seems so.

Q. You have supplied us with certain drawings which have been identified here as Plaintiff's Exhibits 1 through [44] 12. Are there any other drawings that are illustrative of these machines as they were originally built or as they were changed at any time?

A. I have not made any recent drawings since I gave you those.

Q. You have given us all the drawings that were available; is that right?

A. Yes, from our drawings I had, and some were obsolete ones that were laying around.

Q. Union Slide Fastener, since you were an officer, received notice of infringement from Talon, Inc., did it not? A. No.

Q. Well, as an officer of the corporation, can you tell me whether Union Slide Fastener has ever received a notice of infringement from Talon, Inc.?

A. Not during the time I was an officer.

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

Q. Had it received a notice of infringement before you became an officer? A. Yes.

Q. When was this notice of infringement received?

A. It wasn't a notice of infringement. It was a notice that they think that we were infringing. That was some time—as far as I can recall, it was some time in November or December, 1947.

Q. Did you ever sell any chain machines in the United States? [45]

Mr. Fulwider: Does the witness know what you mean by "chain machine"?

The Witness: I know what chain machines mean.

Mr. Fulwider: I do not. I am learning fast.

The Witness: I am not clear about what you mean when you say "selling in the United States"; to another manufacturer of zippers?

Q. (By Mr. Lyon): Do you know what I mean when I say "sell a machine"? A. Yes, I do.

Q. Did you ever sell a chain machine?

A. In the United States?

Q. Anywhere. A. Yes, I did.

Q. Did you ever sell any in the United States?

A. I don't know whether you can call it a sale or not. There is one point I have to clarify here.

Q. Are you now referring to the time that certain machines were turned over to Mr. Loew when you ceased connection with him? A. Yes.

Q. Aside from the transaction with Mr. Loew did you ever sell any machines in the United

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

States? A. No.

Q. Did you ever sell any in any foreign country? [46] A. Yes.

Q. What country?

A. Mexico and Canada.

Q. Did you ever sell any in Great Britain?

A. No.

Q. Did you ever offer to sell any in Great Britain?

A. Just what do you mean by "offer"?

Q. Did you ever solicit any customer in Great Britain? A. Yes.

Q. As a matter of fact, you made a trip to Europe in 1948, did you not? A. Correct.

Q. You went all over Europe trying to sell these machines, did you not? A. No, I didn't.

Mr. Fulwider: "All over" is pretty broad.

Q. (By Mr. Lyon): The machines which you say you sold in Mexico and Canada, those were manufactured here by Union Slide Fastener, were they not? A. Correct.

Q. When were those machines sold in Canada?

A. I believe, from my recollection, that one was sold in 1948.

Q. When in Mexico?

A. In Mexico in 19—well, when you say "sell" just what do you mean, the time when those [47] machines were offered, the time they were shipped, or the time that the—

Q. The time they were shipped.

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

A. The time they were shipped? During '50, during 1950.

Q. These machines were the same type that you are using at your plant? A. Not exactly.

Q. They had the same working principle, didn't they? A. More or less, yes.

Q. The only differences would be in dimensions and angles and things like that?

A. No, there is also a difference in other things, too.

Q. In what way did they differ?

A. Well, in various ways. I think that we do not remove the chips in the same manner as we did before. We do not move the stock in the same manner, we do not have the same travel. We have made changes in them.

Q. Are there any other changes that you can give me besides the chip removing change and the tape feeding or the strip feeding mechanism?

A. Offhand I wouldn't know. We made a lot of changes in them, also changes in the tape tension.

Q. Well, was there any difference in the manner of mounting the tools in the ram?

A. Yes, there is a difference. [48]

Q. What was that difference?

A. The difference in the adjustment of the ram—of the tools.

Q. But the tools were mounted in the ram more or less as shown in Exhibits 13-A and 13-I; is that correct? A. More or less, yes.

Plaintiff's Exhibit No. 6—(Continued)
(Deposition of Philip Lipson.)

Q. Was there any difference in the die housing and the dies contained in the die housing?

A. A difference in the size or dimensions, or which do you mean?

Q. Stick to size and dimensions for the time being.

A. They had die housings, yes.

Q. And generally similar to the die housings in your current machines; right?

A. I don't know what you mean "similar."

Q. Working on the same principle, Mr. Lipson.

A. Yes, I would say yes.

Q. And they had closing jaws on the base; right?

A. Yes.

Q. Those closing jaws are driven from cams on the ram; is that correct?

A. Yes, correct.

Q. And the cams reciprocate above the base; is that correct?

A. Just what do you mean "reciprocate"?

Q. Moving up and down. [49]

A. Moving up and down?

Q. Yes.

A. Yes.

Q. There were eccentrics attached to a main eccentric shaft mounted in the base; right?

A. Eccentrics?

Q. Strike that. There were connecting rods?

A. Yes.

Q. Connecting rods between the ram and the eccentric shaft in the base?

A. Correct.

Q. And those correcting rods drove the ram; is that correct?

A. Yes.

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

Q. The eccentric shaft had an eccentric on it of about the same degree in eccentricity as your current machines; is that correct?

A. More or less.

Q. Referring to this die housing in the base, what elements do you have down in this die housing?

A. I do not follow you. What do you mean by "elements"?

Q. What does the die housing contain?

A. What does the die housing contain?

Q. Yes, what is in there?

A. The die housing consists of two blocks joined together, a block supporting the male punch, a male punch, [50] two notching punches and a shearing die.

Q. If you took those dies out of the die housing and tried to run the machine would you successfully form a tit?

A. I don't know, I never tried it.

Q. Mr. Lipson, you have had considerable experience as a machinist, have you not? A. Yes.

Q. Before coming to this country you were working as a machinist, were you not?

A. As a toolmaker and engineer.

Q. Now from your experience can you tell me if we take a strip of metal— A. Yes.

Q. —and we hit it with a punch—

A. Yes.

Q. —if it is entirely unsupported will that

Plaintiff's Exhibit No. 6—(Continued)
(Deposition of Philip Lipson.)

punch successfully form the tit in the strip of metal in the absence of a die?

A. Your question is not clear to me, when you are talking about a punch. What kind of a punch, two kinds of punches.

Mr. Fulwider: You say entirely unsupported?

Q. (By Mr. Lyon): As a toolmaker—

A. Yes.

Q. —and engineer— A. Yes. [51]

Q. —do you have any opinion—

A. Yes.

Q. —as to what would happen—

A. Yes.

Q. —in this machine— A. Yes.

Q. —if you took the die that cooperates with the punch for forming the tit— A. Yes.

Q. —and left that die out of the die holder?

A. Yes.

Q. What is your opinion as to what would happen? A. Nothing would happen.

Q. You would not form the tit, would you?

A. No.

Q. Now, similarly, if you took the die that cooperates with the punch— A. Yes.

Q. —that does the severing— A. Yes.

Q. —and you left that die out of the die holder— A. Yes.

Q. —could you rely on the tool under that setup to do a proper job of severing the element?

A. No.

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

Q. Suppose the legs of the element had already [52] been closed on the tape, would that make any change in your last answer?

A. That is a hypothetical question. I don't know. I never tried it. Maybe it would bend it, maybe it would cut it.

Q. And it might just tear it loose from the tape; right?

A. It might just tear it loose from the tape, I never tried it.

Q. In these machines you employ at Union Slide Fastener for manufacturing stringers you have got feeding means for feeding the tape, do you not? A. Yes.

Q. That tape moves in a fixed path past a pre-determined position, does it not? A. Yes.

Q. You also have feeding means for feeding the metallic strip, do you not? A. Yes.

Q. And you feed that metallic strip towards the same position that you feed the tape, to where they intersect, do you not? A. Yes.

Q. Now, those machines include in a region not to exceed one inch in diameter around that point of intersection means for performing all of the operations upon the metallic [53] strip to form slide fastener elements from the strip and to attach the elements to the tape, do they not?

A. I don't know whether they are within the inch. Offhand I couldn't say, without checking my record.

Plaintiff's Exhibit No. 6—(Continued)
(Deposition of Philip Lipson.)

Q. The machines include a base, I believe you said? A. Yes.

Q. And a ram? A. Yes.

Q. And means for reciprocating the ram?

A. For moving the ram.

Q. Moving it up and down? A. Yes.

Q. And means carried by the ram and the base and driven by the ram for forming portions of elements in the strip; is that correct? A. No.

Q. In what manner is it incorrect?

A. You say "portions of elements." I don't know what is meant by "portions of elements."

Q. Well, you make the tit, do you not?

A. Yes.

Q. You make the legs? A. Yes.

Q. And the legs are at the end of the strip; is that correct? A. Yes. [54]

Q. And then the feeding means moves the strip so as to place those legs astride the tape; is that correct? A. Yes.

Q. Then you have carried by the ram cutting off means for cutting the element from the strip; right? A. Yes.

Q. Then you have the closing jaws for attaching the legs of the element to the tape; is that correct?

A. That is part of the ram, yes.

(A recess was here taken at 11:55 until 1:40 p.m.)

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

Direct Examination—(Continued)

Q. (By Mr. Lyon): Mr. Lipson, in the machines that you are operating at the Union Slide Fastener after an element is closed about the tape it moves on the tape directly upwards, does it not?

A. It moves on the tape, or with the tape?

Q. With the tape. A. Yes.

Q. Now, those elements in the stringers as manufactured by you are fairly close together, are they not?

A. The tits, you mean, of the element?

Q. One element is spaced from another element only a very short distance; isn't that correct?

A. Yes. [55]

Q. What I am trying to get at is: is it possible in your machines that these closing jaws which clamp the element to the tape would strike more than one blow on the element as that element passed upwardly through the machine on the tape?

A. No.

Q. Well, referring for a moment now to Exhibit 13-L, this is a closing jaw, is it not, that I am pointing out?

A. I can't see from that distance.

Q. This is a closing jaw?

A. Well, it is reeded. You only show the closing jaw housing. The closing jaw is some place inside. This is the housing of the closing jaw.

Q. Here is the closing jaw?

A. You are showing it in a position where the jaw is reeded into the housing.

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

Q. Referring now to Plaintiff's Exhibit 1 to this deposition, will you point out on that drawing, if it is shown there, a drawing of the closing jaw?

A. This drawing is similar to the one we are using, but the man who made this drawing did not show it in detail here. The way we make the jaw it cannot strike more than once.

Q. You mean you put a sloping edge on the—

A. This here goes — recesses away, and then there is a little point over here which holds the element down while [56] it is being closed, so that it does not clamp the element beyond, but if it jumps over that thing there this is recessed further back. It does not strike it again.

Q. Could you take a pencil and paper and sketch that closing jaw?

A. I could. No objection to that, is there?

Mr. Fulwider: No, that is all right.

The Witness: I will just show you the face of it, the contour. It is like this here. I may exaggerate, because it is actually not that large. This is recessed a few thousandths back. Now, this part here is made with a little radius here. That holds, let's see—let's say this is your element here, and there is the other jaw on the opposite side. This holds the element down so that it does not turn, and when it recedes here this element jumps over this part here, and it stays here, but this part being recessed away further than this one it cannot strike it any more. We only close it at one stroke.

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

Q. (By Mr. Lyon): If I understand your sketch properly, this is the closing jaw?

A. That is the closing jaw.

Q. You might say this is a side view of the closing jaw? A. That's right.

Q. This jaw moves in this direction to close and in this direction to open? [57]

A. To open, yes.

Q. This we will call the jaw. We will letter that "Jaw." A. Yes.

Q. This is the element here?

A. Yes, correct. That is also—that is the other side of the element.

Q. This is the other leg?

A. Well, I didn't make a complete drawing. I just wanted to illustrate that one point.

Q. The tape would be going up, passing this way? A. That's right.

Q. I will put some tape in there, and we will call that "Tape": right? A. Yes.

Q. Now, there is an angle here that prevents this from striking?

A. Not an angle. It is recessed. It is further away a few thousandths back of this here. These two are not on the same level.

Q. In other words, the line I am drawing out here, we will call that "A"— A. Yes.

Q. —and then a line drawn from here—

A. Yes.

Q. —we will call it "B"— [58]

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

A. Yes.

Q. ———would be a few thousandths distant?

A. That's right.

Q. And that prevents the upper part of the jaw from striking the second blow?

A. Naturally it wouldn't strike it because there is clearance.

Mr. Lyon: The sketch will be offered as Plaintiff's Exhibit 15.

The Witness: I can make a better sketch, if you want it. I didn't know you wanted to put it in as an exhibit.

(Sketch referred to was marked by the Notary Public as Plaintiff's Exhibit 15, and is hereto attached.)

Q. (By Mr. Lyon): Mr. Waldman is your foreman; is that correct?

A. At the present time, yes, Murray, M-u-r-r-a-y.

Q. Murray Waldman? A. Yes.

Q. Did you know that prior to the time when Mr. Waldman first was employed by the Union Slide Fastener Company that he had previously been employed by the Cap-Tin Company of Los Angeles?

A. I really don't know. He told me he worked some place where they made aluminum sash, that he was a foreman over there, that's all. I beg your pardon, did you ask me [59] whether that was prior to the first time he was employed?

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

Q. Yes.

A. No, I have no idea. I thought you meant this last time when I employed him. At that time I didn't know where he worked before.

Q. You have never heard of his working for Cap-Tin?

A. No, I never heard of Mr. Waldman except one time when I was introduced to him. I visited Mr. Loew's factory just as a friend of his, and he introduced me to Mr. Waldman.

Q. Did Mr. Waldman ever tell you that he had been employed by an organization in which David Silberman was an associate?

A. Did you—was the question whether he ever told me?

Q. Yes.

A. Oh, yes, he did tell me this recently.

Q. Did Mr. Waldman ever tell you what, if any, part he had in the building of the original machines for making slide fastener stringers at the Union Slide Fastener Company?

A. I didn't get that question clear.

Q. Did Mr. Waldman ever tell you what, if any, part he had in the building of the first chain machines at Union Slide Fastener?

A. Well, he told me recently, since I employed him, that he helped Mr. Loew build the machine.

Q. How long have you known Sigmund Loew?

A. How long have I known him from what, today, from now?

Plaintiff's Exhibit No. 6—(Continued)
(Deposition of Philip Lipson.)

Q. Yes.

A. I have met Sigmund Loew in February or—
January or February of 1947.

Q. At that time he was operating the Union
Slide Fastener Company in Los Angeles?

A. He said so, I don't know. Whether he oper-
ated Union Slide Fastener or any slide fastener I
don't know.

Q. Did you ever meet David Silberman?

A. Yes.

Q. Where?

A. At the Hollywood-Roosevelt Hotel in August,
1948.

Q. Who was present?

A. Mr. Loew, myself and Mr. Silberman. Later
on one of his friends joined the table, but that was
after we were through discussing the matters we
came to discuss with him.

Q. At that meeting Mr. Silberman complained to
you and to Mr. Loew, did he not, about certain ac-
tivities of yours on your recent trip to Europe?

A. Yes.

Q. He was rather irate about some remarks you
had made—

A. Yes.

Q. —is that correct? [61]

A. Yes.

Q. At that time did you make any agreement
with Mr. Silberman?

A. Yes, we came to—he offered us a certain so-
lution.

Q. What did he offer you?

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

A. He offered not to assert his patent rights against our firm providing we did not sell any machines in Europe where it would conflict with his business deal with I. C. I., Imperial Chemical Industries. He said "I do not mind you boys selling or operating your machines in any part of the world as long as you do not sell machines in Europe."

Q. At that time you had or were building a number of machines in excess of the requirements of Union Slide Fastener which you proposed to sell in Europe, did you not? A. That's right.

Q. At a subsequent time did Mr. Silberman call you from New York and suggest that if you were going to sell those machines in Europe you should sell them to him?

A. No, that wasn't exactly that.

Q. If something of that nature happened, tell me what happened.

A. At the time when we had the meeting we told him we had no contact or prospects for the sale of machines in other countries except Europe, and that inasmuch as we started to build a number of machines with the idea of selling them in Europe, whether he would not dispose of those machines for us. He said that he might be able to [62] sell those machines to Lightning Fastener which is a branch of the Imperial Chemical Industries. He suggested that he will have a certain Captain Smith, whose visit in the United States he expected, he would

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

have him contact us with respect to selling those 10 machines, providing we would not sell any machines in Europe.

Q. Subsequently he telephoned you from New York? A. He did not.

Q. And said he had Mr. Smith there, did he not?

A. He did not, I telephoned him.

Q. I understand, and the proposition was made that you should go to New York and——

A. A proposition was made that Mr. Loew should go to New York.

Q. At that time it was inconvenient for either you or Mr. Loew to go to New York, was it not?

A. Correct.

Q. And neither of you did go to New York?

A. No, I suggested to Mr. Silberman over the phone that we would have an agent of ours appointed by us contact him with respect to the sale of those 10 machines.

Q. If I understand the facts correctly, you never did sell those 10 machines to Mr. Silberman?

A. No.

Q. The deal just petered out; isn't that right?

A. You said on the 10 machines? [63]

Q. Yes.

A. I don't remember whether that was 10 machines or less. We didn't have 10 machines ready for sale, several machines.

Q. Whatever machines you had——

A. Yes.

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

Q. —the deal petered out, and you did not consummate a deal with Mr. Silberman; isn't that right?

A. No, we did not, on the machines.

Q. Referring again to Plaintiff's Exhibit 15, which is the sketch we drew, I will now draw a lead line and label that "C". Will you tell me just what you call that little projection which I have indicated with the lead line?

A. I don't know what you would call it. You can call it anything, it is a projection.

Q. What is its purpose?

A. Its purpose is to hold down the element while it is being clamped down, so that it does not get away from its perfectly vertical position—rather, horizontal position.

Q. Didn't you tell me this morning that clamping of the jaws to the tape and the severing of the element take place simultaneously?

A. That is correct.

Q. Wouldn't the cutting punch have control of the element—

A. No.

Q. —as well as that little projection during the [64] closing of the jaws?

A. No, it wouldn't.

Q. The cutting punch is in engagement with the element during the closing of the jaws; isn't that right?

A. Correct.

Q. Does the cutting begin to take place prior to

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

the beginning of the closing of the jaws on the tape?

A. Well, that is rather a tough question. It depends on the machine, the way it works. The machine works at a very high speed, and it is awfully hard to control that. If the man adjusts this here downward a little too much it might start the joining much faster, much sooner than we want it, and it is awfully hard to determine it, but technically it is supposed to start simultaneously.

Q. Start cutting and start closing at the same time? A. Simultaneously.

Q. About what speed do you run your machines?

A. Well, depending on the metal we run, it is anywhere between 1,000 and 1500 r.p.m.

Q. Let us say a machine running at 1500 r.p.m.'s, and I assume you mean the closing stroke of the jaws— A. Yes.

Q. —those jaws are driven towards each other by the cam angle of the cams carried by the ram; is that right? A. Yes.

Q. And that thrusts the jaws towards each other? [65] A. Yes.

Q. Those jaws are made out of what?

A. Of steel, of tool steel.

Q. They will have considerable momentum, will they not, being driven at that speed?

A. No, I wouldn't say that. They would not have momentum, because the sideward movement is much less than the up and down movement of the

Plaintiff's Exhibit No. 6—(Continued)

(Deposition of Philip Lipson.)

ram block, because it operates at a certain angle—being that it is operated with an angle on the cam the speed naturally will be lower than the downward movement of the ram block.

Q. Well, that angle is 45 degrees, is it not?

A. No, not exactly.

Q. What is the angle on the cam?

A. I wouldn't be able to tell you offhand. I believe it is somewhere around 50 and 40.

Q. A while ago you identified this drawing, Plaintiff's Exhibit 1, and said that the drawing showed something similar to the closing jaws. By that you meant the two figures shown opposite the figure No. 4 on the circle on that drawing?

A. May I look at it? Yes.

Mr. Lyon: That is all.

(It was stipulated and agreed by and between counsel that the foregoing deposition may be signed before any [66] Notary Public, with the same force and effect as though read and signed in the presence of the Notary Public before whom it was taken.)

/s/ PHILIP LIPSON.

Subscribed and sworn to before me this 17th day of June, 1952.

[Seal] /s/ BETTY DAXON,

Notary Public in and for the County of Los Angeles, State of California. My Commission expires Sept. [illegible]. [67]

[Endorsed]: Filed July 18, 1952.

DEFENDANT'S EXHIBIT "Q"

[Title of District Court and Cause.]

DEPOSITION OF SIGMUND LOEW

Deposition of Sigmund Loew, called as a witness on behalf of the defendant, taken on Tuesday, the 25th day of November, 1952, at the hour of 10:00 o'clock a.m., at 5225 Wilshire Boulevard, 10th floor, Los Angeles, California, pursuant to Notice, before H. A. Singeltary, a Notary Public in and for the County of Los Angeles, State of California.

Appearances: For the Plaintiff: Lyon & Lyon, by: Charles G. Lyon, Esq. For the Defendant: Solomon Kleinman, Esq., Fulwider, Mattingly & Babcock, William J. Graham, Esq., by: William J. Graham, Esq. [1]*

SIGMUND LOEW

called as a witness on behalf of the defendant, being first duly sworn, testified as follows:

Mr. Graham: This deposition is taken pursuant to Notice, the original of which has been handed to the reporter.

Direct Examination

Q. (By Mr. Graham): Mr. Loew, will you please state your full name?

A. Sigmund Loew.

Q. And your address?

A. 11162 Sarah Street, North Hollywood.

Q. What is your occupation now, Mr. Loew?

* Page numbers appearing at top of page of Original Deposition.

Defendant's Exhibit "Q"—(Continued)

(Deposition of Sigmund Loew.)

A. Now it is just as a free lance consultant engineer.

Q. You understand fully the nature of this proceeding?

A. Not exactly. It is the first time. However,—

Q. Well, I will explain it to you in my own way and if Mr. Lyon has any amendments or additions I will be glad to have him make them.

We are taking your testimony which you are giving under oath. I will ask you questions, the stenographer will record the questions and your answers to the questions. He will then transcribe the questions and answers and submit them to you and you will have an opportunity to read them and to make any changes that you want to make, and then you [2] will swear to that deposition and it will become part of the permanent court record in the case of Talon against Union Slide Fastener.

Now, does that explain it to you thoroughly?

A. Correct.

Mr. Lyon: I might add to that, Mr. Loew, that the law permits me to interject with objections in case I think any of the questions that Mr. Graham is asking you are improper, and it will facilitate matters if you don't just snap your answers right out but give me a chance, if I desire to, to get the objection in.

The Witness: Yes, sir.

Defendant's Exhibit "Q"—(Continued)
(Deposition of Sigmund Loew.)

Mr. Graham: And Mr. Lyon also has the right to cross examine you if he so desires.

Mr. Lyon: That is correct.

Q. (By Mr. Graham): Mr. Loew, in 1947 and prior to that time you were in the business of manufacturing zippers; is that correct?

A. Correct.

Q. And your work was done here in Los Angeles? A. Yes.

Q. And did you have a company at that time?

A. Yes.

Q. Under which you operated?

A. That is correct.

Q. And what was the name of that company?

A. Union Slide Fastener Company. It was no corporation at that time. It was just a privately owned company.

Q. But you were the chief principal of that company? A. The sole owner.

Q. The sole owner? A. That is right.

Q. Now, you have also been an inventor of machinery for making zippers?

A. I have a patent on making zippers, if you call that an inventor. I have a patent in my name given by the Patent Office on the method of making slide fasteners.

Q. And do you recall offhand the number of that patent?

A. No, I do not. However, I will be able to

Defendant's Exhibit "Q"—(Continued)

(Deposition of Sigmund Loew.)

facilitate that and give it to you. I believe I have a copy at home somewhere. I am away from it now.

Q. Can you tell us briefly what that patent covered?

Mr. Lyon: I object to that. The patent is the best evidence of what it covered.

Mr. Graham: All right, I withdraw the question.

Q. (By Mr. Graham): Are you acquainted with David Silberman? A. Yes.

Q. How long have you known Mr. Silberman?

A. I have known Mr. Silberman since I believe 1940 or 1941—1940 I believe is more correct. [4]

Q. And at that time was Mr. Silberman engaged in the business of manufacturing zippers?

A. When I first met Mr. Silberman?

Q. That is right. A. Yes.

Q. Did you have a meeting with Mr. Silberman in the Hollywood Roosevelt Hotel at any time in 1948?

A. I had a meeting there together with Mr. Lipson. I don't remember if that was late 1948 or beginning 1949, but we had a meeting together with Mr. Lipson.

Q. And was that meeting at the Hollywood Roosevelt Hotel?

A. At the Hollywood Roosevelt Hotel. That was the only time I met with him at this place. So it must be—I just don't recall the exact date.

Q. Well, do you recall the year, whether it was 1948 or some other year?

Defendant's Exhibit "Q"—(Continued)
(Deposition of Sigmund Loew.)

Q. Did you say anything to Mr. Silberman about any such similarities?

A. Well, my main argument at that time to Mr. Silberman was that if he is using a square unit, which I believe he did, he is infringing on a patent of mine which was also issued about the same time—oh, I don't know if it is a few months before his patent or just about the same time—by the Patent Office, and it was at least as strong as his patent.

Q. That was your claim?

A. That was my claim.

Q. Now, was there any talk about suits being brought by Mr. Silberman or by you? [7]

A. No.

Q. Mr. Silberman didn't state to you that he was going to bring any suit against you?

A. Mr. Silberman in the course of the conversation expressed that if we stay away, if we don't sell any machines to Europe, he doesn't mind if we will be using his machine other places, by that I mean New York and so on. That was more or less, maybe not the exact words but what I gathered from the conversation with him.

Q. Did you agree that you would not sell any machines in Europe?

Mr. Lyon: I object to the question—

Mr. Graham: I withdraw that question. I said "Did you agree."

Q. (By Mr. Graham): Did you say anything

Defendant's Exhibit "Q"—(Continued)

(Deposition of Sigmund Loew.)

to him about whether or not you would sell any machines in Europe?

A. No arrangement was made whatsoever. He said that he was going to buy a number of machines we had at that time which we couldn't use ourselves in the plant at that time, which we made, that he is going to buy or sell them for us so we will not interfere. He called us once long distance to that effect from New York, and it died a natural death. We didn't do any more about it.

Q. Well, Did Mr. Silberman say anything to you about what he would do if you did sell your machines in Europe?

A. Well, I cannot really recall the exact [8] conversation, but the whole thing was at first Mr. Silberman was very much disturbed. In taking me aside, he wanted to jump Mr. Lipson, saying he made some bad remarks against the name of Dave Silberman in Europe, and the people have apparently notified Dave Silberman about it.

Q. Well now, these remarks Mr. Lipson made, Mr. Silberman said they were bad remarks; is that the intent of your testimony here?

A. No, he was very much disturbed. He said, "I don't know the man and he doesn't know me." That was the first time they had met, that time in the Hollywood Roosevelt Hotel; and of course I was trying to cool Dave Silberman off. I said, "Well, you didn't hear it exactly and I wasn't there and it just depends on how people interpret it.

Defendant's Exhibit "Q"—(Continued)

(Deposition of Sigmund Loew.)

I don't know what kind of remarks it was. I wasn't there, and it was certainly not in my behalf that he made those remarks. However, it depends a lot on how people give it over again, I don't know. So it is no use, I mean, feeling bad about it"; and I was trying to cool him off.

Yes, Mr. Silberman was there trying to persuade us, so to say, to give up that idea of selling machines. That was his main purpose the way I understood it.

Q. Well, did he say anything about what he would do if you didn't give up the idea of selling your machines in Europe?

A. Well, he certainly mentioned that there would be [9] lawsuits, and so on. He did mention that in the course of conversation. It wasn't just that he came to us and begged us and we should do him a favor and stop that, no. It was a question that he feels we are taking part of his machine and selling it into Europe; and I have some of my own units in it there, the square unit, but what we have doesn't count, just what he has counts, and so on and so forth.

I know we were supposed to hear from him regarding the matter. We more or less entertained the idea, that I remember, Mr. Lipson and myself at that time, if he would live up to his promise, let us say like buying a certain number of machines, which we did have a surplus at that time, that we will go along with him and not offer any more sales

Defendant's Exhibit "Q"—(Continued)

(Deposition of Sigmund Loew.)

or sell any more machines in Europe; but being—he didn't do anything about it any more, he didn't do any more about it so it just died off.

Q. I believe you did say that he did say he would bring suit against you if you insisted on selling your machines in Europe?

A. Well, he probably mentioned that. I just don't recall. The whole thing was in a spirit of he was trying to stop us and trying to persuade us that we are using his method or his machine.

Q. But he did talk about a possible suit?

A. Probably, yes.

Q. Did he say what kind of suit that would be?

A. No, not as I remember.

Q. Did he make any statement to you about his patent? Did he say that his patent—I withdraw that question. Did he say anything to you about his opinion of the quality of his patent, of his patent?

A. No.

Q. Did he say anything to you about the quality of your patent?

A. Yes, to a certain extent he was trying to belittle it, and probably he did say, like between us, we know they are splitting hairs in those patents on zippers, that everybody is using it, and it is like common property or something of that kind, and so on and so forth.

Q. Did you express any opinion about the quality of his patent?

A. Well, I just don't remember exactly. Cer-

Defendant's Exhibit "Q"—(Continued)
(Deposition of Sigmund Loew.)

tainly we were arguing at that time that I have used his—I agreed to him that I have used, I have adopted—

Q. That is not my question. Your answer isn't responsive. I asked you if you expressed any opinion about the quality of his patent?

A. Well, I didn't think that was a patent for a zipper machine. I thought it was a punch press, a converted type of a punch press at that time which had qualities but not exactly the zipper business. I wasn't trying to belittle him. I do not believe in hurting a man if he works on anything of [11] that kind.

Q. In 1949 did you have a meeting with Mr. Grosvenor McKee of the Talon Company?

A. Mr. McKee once visited our plant. Now, I don't know if this was in 1949 again, if that is the one you are referring to. Mr. McKee visited, came down in a taxi to our plant and spent some time there. Mr. Lipson was there, and I took him back part of his way to his downtown office or his hotel.

Mr. Lyon: I think we can agree on the date, Mr. Graham.

Mr. Graham: All right.

The Witness: I cannot tell you the date.

Mr. Graham: I think, Mr. Lyon, the date is April of 1949.

Mr. Lyon: That is right.

Mr. Graham: Is that agreed to?

Defendant's Exhibit "Q"—(Continued)

(Deposition of Sigmund Loew.)

Mr. Lyon: Yes.

The Witness: April, 1949? No, I had no meeting with him at that time, definitely, on account of in March, 1949, I have assigned all my interest and stock to Mr. Lipson. So I do believe that—maybe it was a meeting with Mr. Lipson and not with me.

Mr. Lyon: Well, there is just one such meeting. We will get the date exactly.

Mr. Graham: That has more or less fixed it as April, [12] 1948 (indicating).

The Witness: April, 1948, is correct. I thought it was before Mr. Lipson went even to Europe. That is correct, Mr. Lyon. I recall it right now. I think that is just about right.

Mr. Lyon: Well, let's fix it definitely; the early part of 1948.

Q. (By Mr. Graham): You recall it as April, 1948?

Mr. Lyon: April 15.

The Witness: I recall the meeting. The date I just cannot establish exactly.

Mr. Graham: I think we are agreed it is April 15, 1948.

Mr. Lyon: Yes.

Q. (By Mr. Graham): And on that occasion Mr. McKee visited the plant of Union Slide Fastener Company? A. That is right.

Q. Before that meeting do you recall having had correspondence with the Talon Company and

Defendant's Exhibit "Q"—(Continued)

(Deposition of Sigmund Loew.)

the firm of Evans & McCoy, lawyers for the Talon Company?

A. I do not recall, but I do believe we received some kind of correspondence, but I had correspondence a few times with the Talon people and Mr. McKee.

Q. Well, what was the nature of that correspondence?

Mr. Lyon: I think we can agree that this correspondence is authentic, and why don't we just show it to him and [13] see if he can identify it?

Mr. Graham: All right.

Mr. Lyon: Mr. Loew, Mr. Graham has produced a file of letters—we may as well identify them for the record—the earliest of which seems to be a letter dated May 17, 1947, signed William C. McCoy, on the letterhead of Evans & McCoy, Attorneys, to the Union Slide Fastener Company; the next of which is a letter, apparently a file copy unsigned, on the stationery of Union Slide Fastener Company, dated June 16, 1947, to Evans & McCoy, having a typewritten notation, "Sigmund Loew, President," at the bottom.

The next of these is a letter dated September 15, 1947, on the letterhead of Evans & McCoy, addressed to Sigmund Loew, President, Union Slide Fastener, Inc., signed by William C. McCoy.

The next of these is a letter dated September 23—what appears to be your file copy of a letter

Defendant's Exhibit "Q"—(Continued)

(Deposition of Sigmund Loew.)

dated September 23, 1947, to Evans & McCoy, bearing the initials "PL/sm" in the corner, and the typed signature, Union Slide Fastener, Inc. That "PL" would be the manner in which your Stenographic Department indicated that the letter was dictated by Mr. Philip Lipson, would it?

The Witness: That is right.

Mr. Lyon: The next of these is a letter dated September 26, 1947, on the letterhead of Evans & McCoy, signed William C. McCoy, and addressed to Philip Lipson, [14] Union Slide Fastener, Inc.

The next of these is a letter dated November 12, 1947, on the letter head of Evans & McCoy, signed by Mr. McCoy, addressed to Union Slide Fastener, Inc., attention Sigmund Loew, President, or Philip Lipson; and you will note some pencil notations on the bottom of this letter to this effect, "Mr. McGee, Vice President of Talon."

The Witness: Yes.

Mr. Lyon: The next of these is what appears to be your file copy of a letter dated November 20, 1947, addressed to Evans & McCoy, signed Union Slide Fastener, Inc., by Philip Lipson, Secretary, and again having the "PL/sm" in the corner, indicating it was dictated by Mr. Lipson; is that correct?

The Witness: Right.

Mr. Lyon: And the next of these is a letter dated June, 22, 1948, to Mr. G. S. McKee, Vice President, Talon, Inc. This appears again to be

Defendant's Exhibit "Q"—(Continued)

(Deposition of Sigmund Loew.)

your file copy of such a letter, signed Union Slide Fastener, Inc., Sigmund Loew, President.

The next of these is a letter on the letterhead of Talon, Inc., dated June 25, 1948, bearing the notation, "Grosvenor S. McKee, Vice President-Works Manager," in the upper left-hand corner, addressed to Sigmund Loew, President, Union Slide Fastener Company, and signed G. S. McKee.

And the last of these letters appearing in this file [15] is a letter to Union Slide Fastener, Inc., on the letterhead of Evans & McCoy, dated January 20, 1948, signed William C. McCoy, and this letter is addressed to the attention of Mr. Philip Lipson.

And I will stipulate, if you wish, Mr. Graham, that these documents which I have just identified may be marked as an exhibit and that they constitute a series of correspondence between the persons whose names appear thereon and the persons to whom they were addressed.

Mr. Graham: Right.

The Witness: Well, may I make a remark?

Mr. Lyon: You may make any explanation you wish.

The Witness: There are a few letters here in connection with my correspondence with Mr. McKee asking him for a favor, that he send me some tape, which has nothing to do with this lawsuit, as you can see, and Mr. McKee answered and he

Defendant's Exhibit "Q"—(Continued)

(Deposition of Sigmund Loew.)

sent me the sample which I needed for some experimentation with the tape.

I do not recall sending this letter (indicating). It might be. It is more than five years, five and a half years. I don't see my signature and I do not recall.

Mr. Graham: The date on that letter is June 16, 1947, addressed to Evans & McCoy, on the letterhead of Union Slide Fastener Co.

Mr. Lyon: Well, can we mark these as exhibits and then give this one a sub-letter so as to identify it more [16] particularly?

Mr. Graham: All right.

Mr. Lyon: Why don't you offer them all as Exhibit whatever you want to give it, and then we will put A, B, C, and so forth, on the various letters.

Mr. Graham: All right. I offer these letters as Defendant's Exhibit 1. You have no objection?

Mr. Lyon: No objection.

Mr. Graham: All right, let's get these in chronological order again.

Mr. Lyon: They were in chronological order until he pulled that one out.

(Whereupon the letters above referred to were marked by the Notary Public Defendant's Exhibits 1-A to 1-J, inclusive, and are attached hereto and made a part hereof.)

Mr. Lyon: Let the record show that the letter to which the witness was referring when he stated

Defendant's Exhibit "Q"—(Continued)
(Deposition of Sigmund Loew.)

he couldn't recall signing it has been marked Defendant's Exhibit 1-B.

Mr. Graham: So stipulated.

Mr. Lyon: I don't know that the record is straight on that, but in stipulating that this correspondence is correspondence between the parties I don't want it to be understood that I am stipulating that Exhibit 1-B was sent. I was just assuming it was. It now appears it may or may not have been.

Mr. Graham: You make that reservation in the [17] stipulation?

Mr. Lyon: Yes. I might state we will check our files and see if we received it, and if we have a copy we will admit it.

Mr. Graham: All right.

Q. (By Mr. Graham): Mr. Loew, does the series of correspondence which has just been introduced into evidence refresh your recollection that before Mr. McKee visited your plant on April 15, 1948, claim had been made against your company on behalf of Talon that you were infringing Talon's patents? Perhaps you would like to look at those.

A. (After examining the exhibits) Yes.

Q. And does it refresh your recollection that a request was made of you to permit a representative of Talon to examine your machines?

A. Yes. Mr. McKee came in and we didn't

Defendant's Exhibit "Q"—(Continued)

(Deposition of Sigmund Loew.)

hide anything. We showed him everything we had out there.

Q. I show you Defendant's Exhibit 1-G and ask you if you recall having seen that letter before?

A. I do not exactly recall but that was more or less the spirit in which we were working. So I must have read that. I haven't got such a good memory to remember all the details.

Q. All right. Mr. McKee did visit your plant. We have agreed that the date was April 15, 1948.

A. Right. [18]

Q. And did he inspect your machines?

A. Right. He went through the plant and he has seen machines.

Q. Did he watch the machines in operation?

A. Well, for a certain length of time, yes.

Q. And did he ask any questions about the machines?

A. Probably. I just don't remember exactly.

Q. Now, after he had inspected the machines, did you have any further conversation with him?

A. Well, yes, he came to the office and was discussing certain things.

Q. Was Mr. Lipson present at that time?

A. Mr. Lipson was present.

Q. Did Mr. McKee make any statement as to whether or not your machines were similar to Talon machines?

Defendant's Exhibit "Q"—(Continued)
(Deposition of Sigmund Loew.)

A. I do not remember of him making such a statement.

Q. Now, does it refresh your recollection as to whether or not there was any discussion of that kind when it appears from these letters that a claim had been made against your company that you were infringing Talon's patents? Did you talk about infringement when Mr. McKee was there?

A. No.

Q. He made no statement of any kind to you regarding infringement? A. No.

Q. And did you hear anything after that meeting [19] from Talon, whether it was Mr. McKee or somebody else in Talon?

A. I don't remember. I don't recollect.

Q. Did you ask him any questions on the subject of infringement? A. No.

Q. Did you ask him for permission to inspect Talon machines?

A. I did not, being he took me through the Talon plant about 1945, I believe it was, or 1944.

Q. That was before this correspondence.

A. I didn't ever drive back East to inspect Talon's plant.

Q. That was before this correspondence took place?

A. Yes. He invited me a few times before whenever I am in the East to come in and visit him. It wasn't exactly for inspection of the plant. I wasn't particularly interested.

Defendant's Exhibit "Q"—(Continued)

(Deposition of Sigmund Loew.)

Q. Mr. Loew, I show you Exhibit 3 attached to the answers by the Talon Company to interrogatories propounded on behalf of the defendant in this lawsuit, which is a written statement dated April 29, 1948, addressed to Mr. R. E. Meech, with a notation that copies had been sent to Mr. Ward M. Robinson and Louis Walker.

It is stipulated that Mr. R. E. Meech is house attorney for Talon, Inc.— [20]

Mr. Lyon: He is attorney of record in this case.

Mr. Graham: And attorney of record in this case; and that Mr. Ward M. Robinson is Vice President of Talon, Inc., and that Mr. Louis Walker is President of Talon, Inc.

Q. (By Mr. Graham): I will ask you if that refreshes your recollection as to your discussions with Mr. McKee on the occasion of that visit?

A. Is it this paragraph—

Q. No, I would appreciate it if you would read the whole thing.

Mr. Lyon: While you are reading it, Mr. Loew, it will save us time if you will have in mind that I am going to ask you, if Mr. Graham doesn't, whether this writing set forth before you fairly summarizes the conversations and the things that took place during this meeting with Mr. McKee.

The Witness: (After reading the document referred to.) All that is correct that you have here.

Defendant's Exhibit "Q"—(Continued)
(Deposition of Sigmund Loew.)

I couldn't write it any better right at the time after the meeting.

Q. (By Mr. Graham): Your testimony is that this statement accurately represents the conversations you had with Mr. McKee?

A. That is right, to the best of my memory.

Q. Do you recall having any conversation with Mr. McKee on the occasion of that visit about a machine for making No. 2 zippers?

A. I wrote him about it, and I asked him if he could [21] send me some samples of special tape which is used on No. 2, and I told him that I was working on that, and he sent me the samples of tape which I have used in making these tests.

Q. Was there any discussion between you and Mr. McKee about the possible purchase of that machine by Talon?

A. Well, yes, I think he had talked about something like that.

Q. Did he express interest in it?

A. Yes, that is right.

Q. And when you wrote to him asking him for some tape for a No. 2 machine, did he send you the tape? A. Yes, he did.

Q. And did you have any further dealings with him after you had received the tape?

A. I most likely thanked him for it, and I don't know, I think I have sent him a sample of the zipper made on the tape, just to show him that I was working on that, but no selling or—

Defendant's Exhibit "Q"—(Continued)

(Deposition of Sigmund Loew.)

Q. No transaction ever developed?

A. No transaction, no.

Q. Mr. Loew, did you have any conversation with Mr. Philip Lipson of Union Slide Fastener earlier this year about the meeting that you and he had with Mr. David Silberman in 1948?

A. Yes.

Q. And did you furnish Mr. Lipson with any written [22] statement at that time?

A. Yes. He asked for a letter, a statement, to that effect, and we have given him a letter to that effect.

Q. I show you a letter dated February 4, 1952, addressed to Mr. Philip Lipson and purporting to bear your signature, and ask you if you can identify it?

Mr. Lyon: May I ask the purpose of this?

Mr. Graham: To refresh his recollection.

The Witness: Yes.

Mr. Graham: Do you want me to offer it for identification?

Mr. Lyon: Well, I am going to object to it.

Mr. Graham: Well, I won't offer it then. I will just ask him if it refreshes his recollection.

Q. (By Mr. Graham): Does that letter refresh your recollection as to any statement that may have been made by Mr. David Silberman concerning Mr. Silberman's patent?

A. Well, as I say, we were trying to offset with our patent or with my patent this square unit of

Defendant's Exhibit "Q"—(Continued)

(Deposition of Sigmund Loew.)

his patent which he claims he was using; and he, not in the exact words, expressed himself, as I said before, that no patent really right now will hold any water, so to say, or be strong, and that was more or less the conversation that I can recall.

Q. Well, did he make that statement specifically about his patent? A. Yes. [23]

Q. And does this letter refresh your recollection that Mr. Silberman may have made a statement about not enforcing his patent against your company if you didn't sell chain machines outside the United States?

A. Particularly in Europe, yes, that was so to say our meeting in there, and that everything was going around this question, that we shouldn't sell any machines and go in this territory where he has given a license or gets a royalty from his machines.

Q. On the occasion of the visit of Mr. McKee to your plant, did Mr. McKee make any statement to you that he was satisfied that your machines did not infringe the Talon patents?

A. I do not know the exact wording of that, but I think—I understood that the Talon people do not take suit against me—I understood from the conversation that they are not going to give me any trouble, so to say, in the patent situation.

Q. Well, did Mr. McKee say anything to cause that understanding?

A. Not exact words that I am not infringing on his patent or statements of that kind.

Defendant's Exhibit "Q"—(Continued)

(Deposition of Sigmund Loew.)

Q. You just got that impression?

A. I got that impression.

Mr. Graham: I think that is all. [24]

Cross Examination

Q. (By Mr. Lyon): Mr. Loew, when Mr. Silberman came to California and you met him at the Hollywood Roosevelt Hotel, you had breakfast with him there that morning, didn't you?

A. I did.

Q. That is right, and after you succeeded in calming him down a little bit over the matter of these remarks that Mr. Lipson had made, then you began discussing the slide fastener business; is that correct? A. Correct.

Q. And it is a fact, is it not, that as a result of that conversation no arrangement or agreement—

Mr. Graham: I object to the form of the question.

Q. (By Mr. Lyon): (Continuing) —was made with Mr. Silberman as to what was going to happen in the future; is that correct?

A. We hadn't made—

Mr. Graham: I object to that. It calls for a conclusion on the part of the witness.

Mr. Lyon: Your objection has been noted. Well, I will reframe the question.

Q. (By Mr. Lyon): At that meeting did you reach an understanding, a firm understanding with Mr. Silberman, as to what you were to do and what

Defendant's Exhibit "Q"—(Continued)
(Deposition of Sigmund Loew.)

he was to do in the future with respect to slide fastener machines? [25]

Mr. Graham: I wish to make the same objection.

The Witness: No, we hadn't had an understanding at that time.

Q. (By Mr. Lyon): Now, I believe at one time you informed me that—and I think your testimony here is to the same effect, correct me if I am wrong—that you had some machines which you had proposed to sell in Europe, and that there was some talk with Mr. Silberman about his purchasing those machines from you; is that correct?

A. Correct.

Q. And subsequent to that meeting he went back to New York and called you on the telephone, did he not? A. Correct.

Q. And he asked you then if Mr. Lipson would be willing to bring those machines with him and come to New York, did he not?

A. Not to bring the machines, but he asked us to come to New York. He asked me or Mr. Lipson, as far as I remember that.

Q. And as a matter of fact you dropped it right there, didn't you, and neither of you went to New York?

A. It wasn't a definite date or anything. He asked us to come to New York, but he didn't have anything definite to give. We thought it was a waste of expense or something of that kind. If he would have had something definite he would

Defendant's Exhibit "Q"—(Continued)

(Deposition of Sigmund Loew.)

have offered it then, and he didn't offer us anything [26] definite. He asked us to come to New York.

Q. Now, on direct examination you started to make a remark and Mr. Graham objected to it on the ground it was not responsive. If my notes are correct, you stated that during this conversation with Mr. Silberman you agreed with him that you had adopted some of Mr. Silberman's ideas. Now, will you go on and finish that answer, if you please.

A. Well, I have developed a machine for the manufacturing of zippers on the same line that we are—that I have used before. I don't know what Mr. Lipson is using now and what exactly takes place. Now, these gentlemen understand that; but as I say, at that time I have used principally the same ideas that my patent was based on. However, being I have developed this patent in the time of war—in 1939 I lived in Canada and Canada was at war, and we couldn't get any material and we couldn't afford at that time to build a special machine. So I adopted a die which fitted into a punch press. Now, I used this idea, not knowing exactly that it was Mr. Silberman's on account of the patent of Mr. Silberman came out later when we had already this machine in operation.

Q. Mr. Loew, when you first started business at Union Slide Fastener in Los Angeles, Mr. Silberman was operating in Los Angeles, too, was he not, in the slide fastener business?

Defendant's Exhibit "Q"—(Continued)
(Deposition of Sigmund Loew.)

A. Not to my knowledge. [27]

Q. Wasn't there an organization in Los Angeles known as Cap-Tin? A. Yes.

Q. And wasn't that Mr. Silberman's business?

A. Not to my knowledge. I don't know. It was the business of Mr. Eisenberg, Mr. Tabah and Mr. Staff.

Q. I see. Was there an employee—

A. Maybe Mr. Silberman had some interest there. I have never looked up in the records to find out if he has an interest in this Cap-Tin business or not.

Q. And one of the employees of Cap-Tin at the time just prior to your setting up Union Slide Fastener was a gentleman by the name of Waldman, was it not? A. Yes.

Q. And Mr. Waldman subsequently became an employee of yours at Union Slide Fastener; is that correct? A. Correct.

Q. And Mr. Waldman assisted you, did he not, in the building of your first machines for Union Slide Fastener for the manufacture of slide fastener chain?

A. Not the first machine. I came over from Canada and I brought some machines with me, Mr. Lyon. However, this double machine, which Mr. McKee explains in here that he has seen four in operation, those Mr. Waldman assisted me in building.

Defendant's Exhibit "Q"—(Continued)

(Deposition of Sigmund Loew.)

Q. Did he have any drawings with him when he came to [28] Union Slide Fastener?

A. Maybe he did. I was mainly interested in that double unit in a machine instead of a punch press which was not the ideal thing for this machine.

Q. Now, on direct examination you stated under questioning by Mr. Graham that at this meeting with Mr. McKee he made no statement concerning infringement; is that correct?

A. That is correct.

Q. And you also stated that Exhibit 3 to the answers and interrogatories, which you read over, fairly and accurately summarizes the conversations that took place? A. That is right.

Q. Were there any conversations that took place during Mr. McKee's visit in April of 1948 to your plant at Union Slide Fastener, between Mr. McKee and Mr. Philip Lipson, that were taking place out of your presence?

A. If there were any different it was out of my presence.

Q. Well, did Mr. McKee leave you and go off with Mr. Lipson some place?

A. No. To my—no, unless it was another date or some other place, not to my knowledge.

Q. Then is it fair to say that Mr. McKee had no opportunity during the visit of April 15, 1948, to your plant to say something to Mr. Philip Lipson that you didn't [29] hear?

Defendant's Exhibit "Q"—(Continued)
(Deposition of Sigmund Loew.)

A. I think so, unless he made some remarks while I was just—when I walked away from him, but I do not presume that this took place.

Q. Now, you have had a lawsuit against Union Slide Fastener, have you not? A. Right.

Q. That lawsuit has been settled, has it not?

A. Right.

Q. That lawsuit was settled on or about February of 1952, wasn't it? A. Correct.

Q. And certain demands were made upon you as to what you should be required to do as a result of that—to effectuate that settlement, were they not?

A. Well, yes. Mr. Lipson asks to give him a statement to that effect, to the meeting with Mr. Silberman.

Q. And that statement is the statement that was used to refresh your recollection, being a letter written by you to Mr. Lipson dated February 4, 1952, and that was written as part of this settlement of this litigation with Mr. Lipson; is that correct? A. Well, yes, it was at that time.

Q. This gentleman I referred to a little while ago as Mr. Waldman, his first name was Morris Waldman; is that correct? [30]

A. Morris Waldman, that is right.

Q. I show you a photostat and ask if that is a picture of the unit you refer to when you speak of the double-headed machines that Mr. Waldman helped you to put together out at Union Slide

Defendant's Exhibit "Q"—(Continued)

(Deposition of Sigmund Loew.)

Fastener? A. Right.

Mr. Lyon: The photograph just identified by the witness is offered as Plaintiff's Exhibit A to this deposition.

Mr. Graham: Mr. Lyon, I think I'm going to have to object to that because there is no indication on it when it was taken, where it was taken, that it is an exact reproduction of any machine that the Union Slide Fastener Company may have used.

(Discussion off the record.)

Mr. Lyon: Well, it isn't too material. I will withdraw the offer.

I have no further questions.

Mr. Graham: I have a couple more questions here.

Redirect Examination

Q. (By Mr. Graham): Mr. Loew, regarding the statement which was shown to you to refresh your recollection as to any statement that may have been made by Mr. Silberman to the effect that his patent wouldn't hold water in court and that he wouldn't try to enforce it against you if you didn't sell any chain [31] machines in Europe, that was a correct statement of your memory?

A. Right; as far as I remember, that was the conversation.

Q. Now, did Mr. Silberman at any time say to you that he was considering bringing a suit against you for conspiracy for interfering with his sales of machines in Europe?

Defendant's Exhibit "Q"—(Continued)
(Deposition of Sigmund Loew.)

A. Mr. Silberman to me?

Q. Yes. A. Never.

Q. Now, when he made this telephone call to you from New York and asked either you or Mr. Lipson to come to New York in connection with the sale of 10 machines that you had manufactured, did you after that telephone call consult your attorney about the advisability of your going to New York? A. Our attorney?

Q. Yes. A. Not to my knowledge.

Q. You don't recall having done that?

A. No, I don't recall.

Q. Who was your attorney at that time, do you recall? Was it Mr. Solomon?

A. Well, we have used Mr. Solomon to draw up an agreement between Mr. Lipson and myself, and I have used him on a few occasions, but we didn't have any attorney. [32]

Q. Well, you didn't have any discussion with Mr. Solomon about that telephone call of Mr. Silberman?

A. I don't recall. I don't remember. Maybe I have mentioned to him that I have seen him. I don't remember.

Mr. Lyon: May we identify this Mr. Solomon a little bit more carefully?

Mr. Graham: Surely.

Mr. Lyon: Do you by any chance mean Mr. Solomon Kleinman?

The Witness: No. It is Solomon & Howie. I

Defendant's Exhibit "Q"—(Continued)

(Deposition of Sigmund Loew.)

think that is the firm name. They are in Hollywood.

Q. (By Mr. Graham): Do you remember Mr. Solomon's first name?

A. William Solomon.

Q. He is an attorney in Los Angeles?

A. Yes, if he is still practicing. I haven't seen him.

Q. He was at that time?

A. Yes, he was at that time.

Q. Did Mr. Silberman ever say that he was considering a suit against you for conspiracy based upon some help or assistance that you may have had from Mr. Waldman in manufacturing your machines?

A. I have never seen Mr. Dave Silberman since that meeting with Mr. Lipson in the Hollywood Roosevelt Hotel?

Q. Did he say anything about that at that time?

A. Not that I recall.

Mr. Graham: All right, that is all.

Reeross Examination

Q. (By Mr. Lyon): In response to that statement of Mr. Silberman in April of 1948 wherein he stated, according to your letter of February 4, 1952, to Mr. Lipson, that he knew his patent wouldn't hold water and that he wouldn't enforce it against you if you stayed out of Europe, did you respond to that statement in any manner agreeing to such terms?

Defendant's Exhibit "Q"—(Continued)
(Deposition of Sigmund Loew.)

A. No, we hadn't had any agreement whatsoever at that time.

Q. Did you consider yourself bound to Mr. Silberman to refrain from selling machines in Europe? A. No.

Q. Now, this Mr. Waldman, did he ever tell you or did you ever otherwise learn that he had signed an agreement with the principals of the Cap-Tin Company or with the company itself which prohibited him from going to work for you?

A. Mr. Waldman when he offered himself to me to come to work for me, he told me that he is under—he is working for them; and I told him as long as he works for them, although I need a man of his caliber who knows the zipper business, on account he was working for a number of years in the zipper business, and I needed his help, however, I said as long as he is connected with another firm of course we [34] cannot enter into any understanding, any agreement.

When he came to work for me he told me that he was released of his agreement and he is free and he is looking for a job.

Q. Did you offer him any interest in the business at that time?

A. No. I told him I would need a man as a superintendent and if he would prove to be the caliber of man that I would need that I would eventually give him an interest—a bonus from the profits, an interest in the profits of the business.

Defendant's Exhibit "Q"—(Continued)

(Deposition of Sigmund Loew.)

Mr. Lyon: That is all.

Redirect Examination

Q. (By Mr. Graham): Mr. Loew, at the time you had your meeting with Mr. Silberman in April of 1948—it wasn't April, it was August of 1948—you had 10 machines that you had manufactured that you were considering for sale in Europe?

A. That is right, approximately.

Q. And you have testified that according to your memory Mr. Silberman told you that he would not enforce his patent against you if you didn't sell machines in Europe. That is correct, isn't it?

A. Well, he wanted us not to interfere with his arrangement that he had out there in getting royalties yearly or monthly. I don't know, but he felt that we are [35] doing him a lot more harm than what our total sales might amount to in Europe, his yearly income and so on.

Q. And when he made that statement to you, or after he made that statement to you, you asked him to try to sell those 10 machines for you, didn't you?

A. No. We told him, and Mr. Lipson, although we didn't have any definite sales at that time, but Mr. Lipson told me and told him that we have 10 machines sold there. In other words, we have potential buyers there, he believes he will be able to sell 10 machines there in Europe. So he voluntarily says, "If I buy these 10 machines from you,

Defendant's Exhibit "Q"—(Continued)
(Deposition of Sigmund Loew.)

I sell them for you to a certain place, another place where they will not interfere with my business, would you agree not to sell any more," and so on and so forth.

That was the conversation.

Q. What was your response to that?

A. Well, we had agreed, on account we needed the sale of 10 machines very badly and we shouldn't have any trouble there, and so forth, that between us at that time, as I understood Mr. Lipson, we would agree to that, providing of course we would have a definite agreement with him, which we didn't have.

Q. Were the machines, these 10 machines we have been talking about, ready at that time, ready for delivery to someone who might purchase them?

A. I don't think we had 10 machines ready then, no. [36] We had some under construction and we had—I don't remember, five or six in the plant that we have used ourselves. We have five I understand under construction.

Mr. Graham: All right, that is all.

Recross Examination

Q. (By Mr. Lyon): Mr. Silberman's proposal to you to buy these 10 machines was for the purpose of shipping them to some other place, such as South America and so on, so as to prevent them going to Europe? Is that your understanding of his purpose?

A. Well, he was going to place them somewhere.

Defendant's Exhibit "Q"—(Continued)

(Deposition of Sigmund Loew.)

He didn't mention where he would put them in or what he would do with them and so on.

Q. He wanted to prevent you from selling them in Europe, was that his purpose?

A. Yes. Maybe he wanted to give them to the same place, and being as they had to manufacture them anyway, maybe it was worthwhile to pay a little more and have these fellows out of the territory. But that was conversation only.

Mr. Lyon: That is all.

Redirect Examination

Q. (By Mr. Graham): This meeting with Mr. Silberman was had at Mr. Silberman's request?

A. He telephoned us, yes. I mean that is the way we have known that he is in town, he called us.

Mr. Graham: All right, that is all.

Mr. Lyon: That is all. We will stipulate that the deposition may be signed by the witness before any Notary Public.

Mr. Graham: So stipulated.

/s/ SIGMUND LOEW.

Subscribed and sworn to before me this 10th day of December, 1952.

[Seal] /s/ MAURICE N. NEWMAN,
Notary Public in and for the County of Los Angeles,
State of California.

[Endorsed]: Filed Dec. 15, 1952.

DEFENDANT'S EXHIBIT "AI"

[Title of District Court and Cause.]

DEPOSITION OF WILBUR B. JAGER

Deposition of Wilbur B. Jager, called as a witness on behalf of the defendant, taken on Tuesday, the 25th day of November, 1952, at the hour of 10:00 o'clock A.M., at 5225 Wilshire Boulevard, 10th floor, Los Angeles, California, pursuant to Notice, before H. A. Singletary, a Notary Public in and for the County of Los Angeles, State of California.

Appearances: For the Plaintiff: Lyon & Lyon, by: Charles G. Lyon, Esq. For the Defendant: Solomon Kleinman, Esq., Fulwider, Mattingly & Babcock, William J. Graham, Esq., by: William J. Graham, Esq. [1*]

WILBUR B. JAGER

called as a witness on behalf of the defendant, being first duly sworn, testified as follows:

Mr. Graham: This deposition is taken pursuant to Notice, the original of which has been handed to the stenographer.

Direct Examination

Q. (By Mr. Graham): Mr. Jager, were you in the room when we talked with Mr. Loew about the nature of this proceeding? A. Yes.

* Page numbers appearing at top of page of Original Deposition.

Defendant's Exhibit "AI"—(Continued)
(Deposition of Wilbur B. Jager.)

Q. You understand the nature of the proceeding?
A. Yes.

Mr. Lyon: I think we can stipulate that this is the man who is intended to be referred to in your notice when you refer to him as William B. Jager, and I make no objection as to the informality.

Q. (By Mr. Graham): Mr. Jager, you are an employee of Talon, Inc.?
A. Yes.

Q. And what position do you hold?

A. Western Regional Manager.

Q. And you were an employee of that firm in 1949?
A. Yes.

Q. And did you hold the same position at that time?
A. Yes. [2]

Q. Do you recall attending a meeting at the office of Talon, Inc., on September 30, 1949, between yourself and representatives of other slide fastener concerns?

A. I remember such a meeting. I wouldn't recall the date.

Mr. Graham: I think probably we can agree on that, can't we?

Mr. Lyon: I think so.

Mr. Graham: I think it is in the answer to the interrogatories. It says here during 1949, it doesn't pin down any date.

Mr. Lyon: Well, there was only one meeting of this type.

Mr. Graham: That is right.

Defendant's Exhibit "AI"—(Continued)
(Deposition of Wilbur B. Jager.)

Q. (By Mr. Graham): You do recall a meeting in 1949 which you attended and which was attended by Mr. Eisenberg representing the California Slide Fastener Company, and Mr. Philip Lipson representing the Union Slide Fastener Company, and Mr. Napp of the Roxy Thread Company? A. Yes.

Q. And do you recall who arranged that meeting?

A. My recollection is that the meeting was arranged by Mr. Abramson of the Apparel Manufacturers Supply Company.

Q. And was that concern at that time either a jobber or an agent for Talon zippers?

A. Yes, they were jobbers. [3]

Q. Do you recall any person in particular—do you recall whether any person in particular presided at that meeting?

A. No, I don't recall that.

Q. Well, when the meeting convened did you make any statement to the meeting as to its purpose? A. No.

Q. Do you recall what the purpose of the meeting was?

A. Not particularly. There had been a lot of talk on the part of our jobber about the fastener situation in general, and as I recollect he called me at one time and wanted to know if there could be a meeting or a get together or something of that nature, and we happened to have some facili-

Defendant's Exhibit "AI"—(Continued)

(Deposition of Wilbur B. Jager.)

ties down in our building that were apropos, and so he wanted to know if they could use them.

Q. Did Mr. Abramson attend that meeting?

A. No, he didn't.

Q. Do you recall what was discussed at that meeting?

A. Well, there was a lot of conversation.

Q. Well, what was it about?

A. Well, it was about the fastener business in general, the product, the price, and generalities, so to speak, apropos to the business.

Q. Well, at that time was there considerable difficulty in the industry regarding the lowering of prices of [4] zippers?

A. Well, no more so than at a lot of other points in the history of the industry.

Q. Well, do you recall whether at that time—

Mr. Lyon: Have you got everyone that was present at this meeting?

Mr. Graham: I think we have.

Mr. Lyon: No, you have got only Eisenberg, Lipson, Napp and Mr. Jager. There were two other people present, weren't there?

Q. (By Mr. Graham): Do you recall who else was present at that meeting besides those named?

A. Mr. Detweiler, and there was another gentleman with Mr. Napp, whose name I don't recollect at the moment.

Q. Mr. Bogash? A. Correct.

Q. And Mr. Bogash is associated with Mr.

Defendant's Exhibit "AI"—(Continued)
(Deposition of Wilbur B. Jager.)

Knapp? A. So I understand.

Q. In the business of Roxy Thread Company?

A. Yes.

Q. And Mr. Detweiler is an employee of Talon?

A. Correct.

Q. Do you recall whether at that time the Conmar Fastener Company had reduced its price considerably on 7-inch skirt zippers?

A. I don't remember. [5]

Q. Do you recall what the market was for skirt zippers at that time?

A. Well, I don't know exactly what you mean.

Q. Well, the relative prices charged by the different manufacturers for 7-inch skirt zippers?

A. Well, there was a fluctuation in price, always has been. You could possibly term it competitive.

Q. Well, when you say a fluctuation in price, there were zippers being sold at a price—7-inch skirt zippers being sold at a price below the price then being charged by Talon? A. Correct.

Q. In answer to Interrogatory No. 83 propounded by the defendant to Talon, the answers to which are dated May 5, 1952, which were signed by you, you answered in response to the question, the purpose of the meeting which we are now discussing was to discuss market conditions. Is that correct? A. Correct.

Q. That was the purpose of the meeting?

A. Correct.

Q. And in answer to Interrogatory No. 83-E

Defendant's Exhibit "AI"—(Continued)

(Deposition of Wilbur B. Jager.)

which read: "State whether any discussion was had at that meeting concerning the then current prices of the standard 7-inch skirt zipper." your answer was yes. That is correct? A. Correct.

Q. Now, can you tell us what that discussion was, [6] in your own words? We just want to know what happened at that meeting, what was said by you and what was said by the others present.

A. Well, very frankly the meeting has been so long ago and there was so much said on the part of the people that attended it that I could never hope to remember particularly what was said. However, the general drift, as I recall, was that of the gentlemen present Mr. Napp did most of the talking, Mr. Eisenberg and Mr. Lipson chiming in relative to their own concerns, and we were more or less—when I say we, I mean Mr. Detweiler and myself—were listening to a discussion that revolved around skirt fasteners and then jumped into other styles of fasteners and prices that the different firms represented there were selling for, and even going into maybe some instances that might have to do with an account or accounts. There was a lot of conversation, but I can't—

Q. Well, the nature of the conversation is what I'm trying to get at.

A. Well, I think the nature of it had to do with the price situation and competitive conditions ex-

Defendant's Exhibit "AI"—(Continued)
(Deposition of Wilbur B. Jager.)

isting in the market and quite a few accusations, rather pointedly in some cases, between some of the firms represented in the room about what they were individually doing and selling their fasteners for.

Q. What accusations were made by whom? [7]

A. By the people present.

Q. Directed to whom? A. Each other.

Q. None directed to Talon? A. No.

Q. Was there any discussion at the meeting about the Wilzip zipper?

A. The name was brought up.

Q. What else was said about it?

A. Well, frankly I can't remember what was said about Wilzip specifically.

Q. Well, was anything said about Talon introducing the Wilzip zipper on the Pacific Coast?

A. Well, the Wilzip fastener had already been introduced on the Pacific Coast.

Q. By whom? A. By Talon.

Q. And is the Wilzip fastener a less expensive fastener than the standard Talon fastener?

A. Yes.

Q. How much less expensive is it? I mean, what did it at that time sell for, if you recall?

A. I don't recall what the price was of the fastener at that time.

Q. If I mentioned 4½ cents would that refresh your recollection? [8]

A. That could have been the price. I could check it from office records, what the price was of

Defendant's Exhibit "AI"—(Continued)

(Deposition of Wilbur B. Jager.)

the product at that time, but I can't recall at this moment just what the price structure was.

Q. Did you make any statement to the others present that Talon might reduce the price of the Wilzip zipper if the other manufacturers reduced their prices any further than they had already done? A. Not that I recall.

Q. You say that the Wilzip zipper had been introduced on the Pacific Coast. Do you recall approximately the time when that had been done?

Mr. Lyon: If I may make a statement there, I think that is a mistake on the part of the witness. I checked this matter with the warehouse records Friday of last week and the first shipment of zippers into this area was in April of 1952, and I think the witness is confused between the time when he executed the answers to the interrogatories and the time of this meeting, because—I would like to have the record straight, because in answer to Interrogatory 83-F he stated in May of 1952 that Wilzip had not been shipped into this competitive market as of that date. So there is an obvious inconsistency between that and the statement that they had already been shipped in here in 1949.

Q. (By Mr. Graham): Now, you have just heard the statement of your counsel, Mr. Jager, that in answer to [9] Interrogatory No. 83-F you stated that as of May 5, 1952, the date on which you signed these answers, that Wilzip zippers had

Defendant's Exhibit "AI"—(Continued)

(Deposition of Wilbur B. Jager.)

at no time been shipped into this competitive market, obviously referring to the Los Angeles market, and in answer to a question that I asked you previously you said that at the time of this meeting in 1949 the Wilzip zippers had already been introduced to the Pacific Coast. Do you wish to clarify your answer?

A. Well, I think what my thinking was when I say "introduced," I think there was a question previously there, did the name Wilzip come up at the meeting, or some such statement. I meant introduced from the standpoint that the name was known to the trade, because Talon had such a fastener and no doubt the name was familiar.

Q. Well, do you know whether persons representing other concerns or concerns other than those represented at the meeting had been invited to the meeting but did not attend? A. I don't know.

Q. And you don't recall any discussion of the sale of Conmar zippers at that time at a very low price? A. Not that I can remember.

Q. Do you recall that there was any discussion about discounts and premium sales being made by the various manufacturers?

A. I think there was some discussion along those [10] lines, yes.

Q. Well, did you on behalf of Talon make any objection to that type of transaction?

A. I don't remember specifically that I did, other than there was, as I recollect, some discussion

Defendant's Exhibit "AI"—(Continued)

(Deposition of Wilbur B. Jager.)

about fasteners being sold other than at published price lists, and as I remember, there was a lot of conversation which I couldn't remember now.

Q. Well, at that time Talon was not offering any special discounts or premiums on the sales of its zippers? A. No, sir.

Q. Did the representatives of any of the firms present make any complaint about advertisements that had been published by Talon giving publicity to the names of some of their chief customers?

A. Not that I recall.

Q. Was there any discussion about the sale of the Wilzip zipper in the Eastern part of the United States? A. Not that I remember.

Q. Was there any discussion about smaller firms, firms smaller than Talon, going out of business on the Eastern Coast after the sale or after the placing on the market there of the Wilzip zipper?

A. I don't remember any such discussion or statements.

Q. At the time of this meeting, Mr. Jager, did you [11] know or had you been informed by any of your superiors that the Talon organization had acquired a patent issued to David Silberman for a zipper manufacturing machine?

A. No, I have no information at all on anything like that.

Q. Well, did you make any statement at the meeting that you and your associates would not

Defendant's Exhibit "AI"—(Continued)
(Deposition of Wilbur B. Jager.)

like to have the Wilzip zipper sold in this market, that is the Pacific Coast market, in competition with Talon zippers?

A. I don't remember any such statement.

Q. Did you have any instructions from your superiors concerning this meeting that was held in 1949? A. No.

Q. Did you inform them that such a meeting had been held? A. No.

Q. And there isn't any report of the meeting or the discussions that were had at the meeting?

A. Not that I know of.

Q. You didn't prepare any? A. No, sir.

Q. Did any of those present at the meeting complain that they were suffering from a price war in the zipper industry?

A. It would seem to me that they were all doing a lot of complaining and accusing of each other, about what [12] they were suffering at each others hands, yes.

Q. No complaints against Talon? A. No.

Q. Did Talon have any complaints against them? A. No.

Q. Was any statement made by anyone present at the meeting that his firm would sell zippers as low—that is 7-inch skirt zippers—as low as 2 cents each if he had to?

A. I don't recall that exact wording.

Q. Well, what do you recall about that?

A. I recall a statement to mind made by Mr.

Defendant's Exhibit "A1"—(Continued)

(Deposition of Wilbur B. Jager.)

Napp, that if he had to he would put a gold brick in every box of zippers, if he had to to sell them.

Q. Do you recall to whom he made that remark?
A. To the general group.

Q. Now, you said in answer to a previous question that Mr. Lipson did some talking at this meeting. Do you recall the nature of what he said?

A. Oh, I think, as I recall, it was along the same lines that the other gentlemen, Mr. Eisenberg and Mr. Napp, were talking. It had to do with the price of fasteners.

Q. Did he say anything about his own prices?

A. He talked about his own prices, but just what he said I don't remember. I couldn't say specifically.

Q. Did Mr. Lipson make any statement to the effect that he wouldn't like to see any price war in the zipper [13] industry?
A. He may have.

Q. Did he say anything about whether or not he had been offering special premiums or discounts?

A. Well, as I remember there was a complete denial on the part of the three local firms represented that any of them were doing anything along that line.

Q. Now, you also said that Mr. Eisenberg had something to say at the meeting. Do you recall what it was that he said?

A. Well, not specifically in so many words,

Defendant's Exhibit "AI"—(Continued)
(Deposition of Wilbur B. Jager.)

again generalities on the same subjects of prices and products.

Q. Did he complain about the competition being offered by Conmar?

A. I can't remember whether he complained about—he complained about competition in general, but I can't remember whether he complained specifically about Conmar.

Q. Do you know whether a representative of Conmar was invited to the meeting?

A. Not to my knowledge.

Q. Do you recall what Mr. Bogash had to offer, what he said at the meeting, if he said anything?

A. I don't recall Mr. Bogash saying anything. I don't remember at all.

Q. And have you told us everything that you recall that Mr. Napp may have said? [14]

A. Well, the one statement that I mentioned, that would stand out in my mind. Aside from that, I think Mr. Napp did a lot of talking but again it was along the same lines I previously described from others. Specific statements, no.

Mr. Graham: I think that is all I have.

Cross Examination

Q. (By Mr. Lyon): Do you recall an incident in which Mr. Napp handed out his price cards to the people that were present and said, "These are my prices?"

A. Yes, I do.

Mr. Lyon: That is all.

Mr. Graham: That is all. We will stipulate that the deposition may be signed before any Notary Public.

Mr. Lyon: So stipulated.

/s/ WILBUR B. JAGER.

Subscribed and sworn to before me this 4th day of Dec., 1952.

[Seal] /s/ M. S. MUSANTE,

Notary Public in and for the County of Los Angeles, State of California. My Commission Expires May 31, 1956. [15]

[Endorsed]: Filed Dec. 8, 1952.

DEFENDANT'S EXHIBIT "AJ"

[Title of District Court and Cause.]

DEPOSITION OF C. F. DETWEILER

Deposition of C. F. Detweiler, called as a witness on behalf of the defendant, taken on Tuesday, the 25th day of November, 1952, at the hour of 10:00 o'clock A.M., at 5225 Wilshire Boulevard, 10th floor, Los Angeles, California, pursuant to Notice, before H. A. Singeltary, a Notary Public in and for the County of Los Angeles, State of California.

Appearances: For the Plaintiff: Lyon & Lyon, by: Charles G. Lyon, Esq. For the Defendant: Solomon Kleinman, Esq., Fulwider, Mattingly & Babcock, William J. Graham, Esq., by: William J. Graham, Esq. [1*]

* Page numbers appearing at top of page of Original Deposition.

Defendant's Exhibit "AJ"—(Continued)

C. F. DETWEILER

called as a witness on behalf of the defendant, being first duly sworn, testified as follows:

Mr. Graham: This deposition is taken pursuant to Notice, the original of which has been handed to the stenographer.

Direct Examination

Q. (By Mr. Graham): Mr. Detweiler, will you give us your full name and address, please?

A. Charles F. Detweiler, 5447 Zelzah, Encino, and that address is good for the next maybe 20 days and then it will be 5100 Woodley, Encino.

Q. Mr. Detweiler, you were present in the room when we explained to the witness Mr. Loew the nature of this proceeding? A. I was.

Q. And you understand it? A. I do.

Q. You are an employee of Talon?

A. Correct.

Q. And what is your position?

A. Retail Promotional Manager, Western Region.

Q. And what was your position in 1949?

A. Southwestern District Sales Manager.

Q. Do you recall attending a meeting at the office [2] of Talon in 1949 about the month of September which was attended by Mr. Robert Eisenberg, Mr. Napp, Mr. Philip Lipson, Mr. Abe Bogash and Mr. Jager of your firm?

A. I do.

Q. Do you know who arranged that meeting?

Defendant's Exhibit "AJ"—(Continued)

A. Yes, Julius Abramson whose name you did not mention but who was also present.

(Deposition of C. F. Detweiler.)

Q. It is your recollection that Mr. Abramson was also present at that meeting? A. He was.

Q. And what concern is he associated with?

A. Threads, Inc. is the name of the—I may be in error on his being present. He engineered the deal so I took it for granted that he was there,—Threads, Inc. or Apparel Manufacturers Supply. They operate under two names.

Q. And does either of those names have some business relations with Talon?

A. At that time they were a jobber for Talon, a jobber to the women's ready-to-wear field or trade.

Q. And do you know whether there were other concerns other than those represented at the meeting who had been invited to it?

A. That I do not know.

Q. Now, it was held at the Talon office, and where was that office at that time?

A. 18th and Hill Streets in Los Angeles. [3]

Q. And was the meeting held in any special room in that office?

A. It was held in a conference room that is part of our office set-up down there. The reason for it being held there was that that was the only meeting place for that special group where they wouldn't have to sit on packing cases.

Q. Zipper packing cases?

A. That is about it, yes.

Defendant's Exhibit "AJ"—(Continued)
(Deposition of C. F. Detweiler.)

Q. And did anyone in particular preside at the meeting?

A. Everybody concerned had their two bits worth. It was kind of a crying session, if you want to put it that way. I don't know that anyone did preside.

Q. Did anyone open the meeting and explain the purpose of it?

A. I imagine that Mr. Jager did.

Q. And do you recall the purpose of the meeting, that was stated at that time?

A. Yes. To put it very frankly, it was an attempt to find out who was calling who who.

Q. You mean it was a session to air complaints?

A. That is right, air complaints and call a spade a spade. Customers were quoting prices supposedly quoted by one local manufacturer. The local manufacturer was telling the representative of some other manufacturer that he never [4] in the world quoted such a price, and frankly nobody knew who to believe, and we were sitting on the sidelines watching a pretty good show.

Q. When you say customers, customers of whom?

A. Customers of all of the local zipper manufacturers. By customers, I mean garment manufacturers, handbag manufacturers.

Q. Were any of these garment manufacturers also customers of Talon?

Defendant's Exhibit "AJ"—(Continued)

(Deposition of C. F. Detweiler.)

A. Yes, most of them.

Q. And had they made any complaints to Talon?

A. No. We did not get into any of the cat and dog fight price angles.

Q. Well now, I think maybe you misunderstood my question. I don't mean complaints by those present at the meeting but complaints of purchasers of zippers, apparel manufacturers. Did any of them complain to Talon about the situation in the zipper industry? A. Yes, continually.

Q. And what was the nature of their complaints?

A. The nature was that they couldn't sell Talon zippers at Talon list and afford to continue carrying Talon fasteners because they were being under-sold by everybody else in the market, and that at that time there seemed to be little or no rhyme, reason or pattern to the prices that were being quoted. [5]

Q. Do you recall at that time the Conmar Company was selling zippers in this market at a very low price, conducting a sort of closeout sale as it were of 7-inch skirt zippers?

A. I am reasonably sure they were. That is a habit of theirs, but it was nothing that ever caused us any great concern because it was always a one-shot attempt at something they found hard to get.

Q. But you were concerned about the complaints of customers?

Defendant's Exhibit "AJ"—(Continued)
(Deposition of C. F. Detweiler.)

A. You might say our jobber was concerned. The only complaint we ever got, I might add, is that our prices were too high, and the prices were usually so far out of line that there was no quibbling about it. They were too high and that usually ended it right there.

Q. Was there any discussion at the meeting of the Wilzip zipper? A. Yes.

Q. Do you recall what that discussion was about?

A. I don't recall anything other than it was a possible for the future.

Q. Was any statement made at the meeting that the Wilzip zipper might be introduced in the Pacific Coast market?

A. The remark was made that the Wilzip fastener would probably be introduced on the West Coast in the future.

Q. And was any reference made to the effects of the [6] introduction of the Wilzip zipper in the Eastern States, in relation to its effect upon smaller manufacturers? A. Not that I remember.

Q. Was any statement made that the Talon representatives in Los Angeles would not like to see the Wilzip zipper introduced to this market?

A. Yes.

Q. Do you recall who made that statement?

A. Mr. Jager.

Q. Did he explain why he wouldn't like to see it?

A. There were several reasons. One was ques-

Defendant's Exhibit "AJ"—(Continued)

(Deposition of C. F. Detweiler.)

tionable quality at that time, and while this is probably not the exact words again of these statements—

Q. Just the substance.

A. (Continuing) —it would put us right in the middle of the dogfight that our local competition was in.

Q. Was most of the discussion about the 7-inch skirt zippers and their prices?

A. The 7-inch skirt fastener was the focal point.

Q. And was there any discussion about some of the manufacturers offering premiums and discounts in the sale of their zippers?

A. No. There were I think I can safely say whining insinuations that it was being done, but no open discussion on it.

Q. Was any statement or any complaint made by any [7] of the other manufacturers that Talon was in effect giving premiums by giving prominent publicity in newspaper advertisements to their principal customers?

A. I do not remember any mention of that.

Q. Do you recall the substance of anything that may have been said by Mr. Napp of the Roxy Thread Company?

A. Mr. Napp said a great deal. In fact, he made with most of the conversation that was made at that meeting, but Mr. Napp said he was in the zipper business to stay—this kind of stuck—and he intended to stay in it and he hoped that staying in the

Defendant's Exhibit "AJ"—(Continued)
(Deposition of C. F. Detweiler.)

business wouldn't take all he had ever made out of the business.

Q. Do you recall anything else that Mr. Napp may have said—just the substance of it. I know you can't remember the exact words.

A. There was one outstanding wisecrack, which I believe should be taken as that, that he was going to sell zippers if he had to put a nugget in each box, if that is the one we are digging for.

Q. Did he refer to a gold nugget?

A. Yes. He was talking quite a lot in regard to his gold bricking endeavors and activities.

Q. Do you recall anything else that Mr. Napp may have said?

A. Nothing other than that Mr. Napp definitely stated that it was his sincere desire to be open and [S] aboveboard, and to be on record, he was perfectly willing to give everyone present a copy of his standard and published price list, which he did.

Q. Now, did Mr. Lipson have anything to say at that meeting that you recall?

A. Mr. Lipson had very little to say at the meeting.

Q. Well, do you recall what he said?

A. No, I don't.

Q. Do you recall what Mr. Eisenberg of the California Slide Fastener Company said?

A. The only thing I recall from Mr. Eisenberg was his sincere hope that he would be left alone with the few customers he had, and that no one

Defendant's Exhibit "A.J"—(Continued)

(Deposition of C. F. Detweiler.)

would try to undershoot his present prices on garment bags.

Q. Do you recall whether or not he was selling or his firm was selling 7-inch zippers at that time?

A. They were trying to. I don't think they were enjoying very much success.

Q. Do you recall what his company's price was on 7-inch zippers at that time?

A. Without attempting to be facetious, I would say it was whatever he could get.

Q. Do you recall what Mr. Napp's list price was? A. 4.5, 4.5 a hundred.

Q. Four dollars and a half a hundred?

A. Yes. That I might add was at that time an asking [9] price, and it was a sharpshooting era.

Q. Do you recall at that time what Talon's price was for its standard 7-inch zipper?

A. 5.90 a hundred.

Q. Was any statement made on behalf of Talon that Talon had no particular objection to a 4½ cent price or a 4.50 price per hundred, provided it didn't go any lower?

A. I do not believe that—let me find the right words here. I'm not much of a quoter.

Q. Take your time.

A. I do not believe that there was any specific price or lower angle to it as much as an established price that would be lived up to. We have always expected to get a premium for the Talon fastener. We never expected to sell it at the same price as

Defendant's Exhibit "A.J"—(Continued)
(Deposition of C. F. Detweiler.)

the bulk of the—may I say run of the mine, without being disparaging.

Q. Do you recall whether you had decided upon any price which you would like to have established as a firm price for zippers sold by the other manufacturers? A. No.

Q. Prior to that meeting had the standard 7-inch Talon fastener been sold for less than \$5 a hundred?

A. By the standard Talon fastener you mean the fastener—

Q. 7-inch skirt fastener.

A. Which was just mentioned as selling for 5.9? [10]

Q. That is correct.

A. God, I'm not a walking price book, but I would say no. That was a low for the 7-inch fastener with the automatic slider. He did have an all aluminum pin locking skirt fastener that was sold at five cents.

Q. Was that a 7-inch fastener?

A. That was a 7-inch fastener with a pin lock slider.

Mr. Lyon: And by five cents, you mean \$5 a hundred?

A. \$5 a hundred. That was an attempt on the part of Talon to produce a fastener that could be bought by the low end manufacturer.

Q. (By Mr. Graham): Do you know what the Wilzip fastener sold for in the Eastern States at that time? A. I have no idea.

Defendant's Exhibit "AJ"—(Continued)

(Deposition of C. F. Detweiler.)

Q. Did your superiors furnish you with any price lists or suggested price lists for the Wilzip fastener, at that time?

A. Not that I had any knowledge of. We had no stock, we had no promise of delivery better than 30 days, and the few orders that we took on Wilzip were for the long lengths sold to Sunshine Manufacturing which we finally took back and turned back to the Cleveland source for credit. We had no demand for them.

Q. Do you recall when that sale was made? Was it at or prior to this meeting? [11]

A. I would say it was prior to that meeting.

Q. And the sale was made here in Los Angeles?

A. Yes.

Q. So that at the time of the meeting the Wilzip zipper had been sold in the Pacific Coast market?

A. Only for that one use, which was a very cheap, low end garment bag. The lengths were 26, 30 and 36 inches.

Q. And do you recall what it sold for?

A. I have not the slightest recollection. All I know is it didn't stay sold.

Q. It was a lower price than the standard Talon zipper or the pin lock zipper? A. Yes.

Q. Do you remember whether it was less than four cents or \$4 a hundred?

A. That wouldn't be a fair comparison because of the difference in the lengths of the fasteners. You are talking about an average of 30 inches against a 7-inch fastener.

Defendant's Exhibit "AJ"—(Continued)
(Deposition of C. F. Detweiler.)

Q. That is right.

A. If I'm not mistaken, that fastener was priced higher than it could have been bought locally, but because it was produced by remote control by Talon it held quite a bit of interest to the manufacturer in question.

Q. At the time of this meeting had you been informed by your superiors that Talon had acquired a patent [12] issued to David Silberman, some time prior to the meeting?

A. No. I might inject the thought that I am just a lowly salesman and would have no knowledge of what management was doing with regard to something like that.

Q. Was any report of this meeting given to your superiors? A. Not that I know of.

Q. Was there ever any written digest of what took place at the meeting made by your concern?

A. Not to my knowledge.

Q. When were you first informed that this meeting was going to take place?

A. A matter of several days before it occurred.

Q. And by whom were you informed?

A. Mr. Jager. I had heard the hope expressed that there might be such a meeting from Mr. Abramson and Mr. White of Apparel who were my customers.

Q. That is the same Mr. Abramson you referred to before? A. That is right.

Q. And the company is the Apparel Manufacturers Supply Company? A. Yes.

Defendant's Exhibit "AJ"—(Continued)

(Deposition of C. F. Detweiler.)

Q. Now, do you recall anything else that Mr. Jager may have said at the meeting that you haven't already told us? [13] A. No.

Q. Do you recall whether any statement was made by anyone at the meeting that if the 7-inch skirt zippers were sold for less than \$4.50 per hundred there would be a loss on the sale rather than a profit?

A. I believe that Mr. Napp voiced that thought.

Q. And do you recall whether Mr. Jager said anything about that?

A. No, I do not. I don't know how he could because he certainly is not familiar with the manufacturing costs of Union, Calzip and Roxy.

Mr. Graham: I think that is all I have.

Mr. Lyon: You are excused, Mr. Detweiler.

Mr. Graham: And the same stipulation, that the deposition may be signed before any Notary Public?

Mr. Lyon: So stipulated.

/s/ CHARLES F. DETWEILER.

Subscribed and sworn to before me this 15th day of December, 1952.

[Seal] EDNA B. MOLOFF.

Notary Public in and for the County of Los Angeles, State of California. My Commission Expires Dec. 6th, 1956. [14]

[Endorsed]: Filed Jan. 8, 1953.

DEFENDANT'S EXHIBIT "AK"

DEPOSITION OF ROBERT EISENBERG

Deposition of Robert Eisenberg, called as a witness on behalf of the defendant, taken on Tuesday, the 25th day of November, 1952, at the hour of 3:00 o'clock p.m., at 5225 Wilshire Boulevard, 10th floor, Los Angeles, California, pursuant to Notice, before H. A. Singeltary, a Notary Public in and for the County of Los Angeles, State of California.

Appearances: For the Plaintiff: Lyon & Lyon, by Charles G. Lyon, Esq. For the Defendant: Solomon Kleinman, Esq., Fulwider, Mattingly & Babcock, William J. Graham, Esq., by William J. Graham, Esq. [1]*

ROBERT EISENBERG

called as a witness on behalf of the defendant, being first duly sworn, testified as follows:

Mr. Graham: This deposition is being taken pursuant to Notice, the original of which has been handed to the stenographer.

Direct Examination

Q. (By Mr. Graham): Mr. Eisenberg, will you please give us your full name and address?

A. Robert Eisenberg, 201 South Spaulding Drive, Beverly Hills.

Q. Mr. Eisenberg, were you present in the room this morning when I explained the nature of this proceeding to the other witnesses who have testified? A. No.

* Page numbers appearing at top of page of Original Deposition.

Defendant's Exhibit "AK"—(Continued)

(Deposition of Robert Eisenberg.)

Q. This is a deposition that you will give under oath. The questions and answers will be recorded by the stenographer and transcribed, and your deposition will be submitted to you for any corrections and for your signature before a Notary. Mr. Lyon represents Talon, Inc. and has the right to make any objections to questions that he may think are improper. He also has the right to cross examine you.

Now, do you understand what the nature of the proceeding is from that statement? [2]

A. Yes.

Q. Do you recall attending a meeting at the office of Talon in the month of September, 1949?

A. I don't remember the month but I attended a meeting there.

Q. Was it the latter part of 1949?

A. That is right, sir.

Q. And do you remember who else was present at that meeting?

A. When I arrived there there was Mr. Jager, Mr. Detweiler, Mr. Napp, Mr. A. Bogash and Mr. Lipson.

Q. And do you know who it was arranged for that meeting?

A. I am not positive but I think it came out of the office of their jobber, of Talon's jobber. Either Mr. Whitesenfeld or Mr. Abramson I think arranged for the meeting.

Defendant's Exhibit "AK"—(Continued)
(Deposition of Robert Eisenberg.)

Q. Now, is the name of that jobber Apparel Manufacturers Supply Company?

A. That is right, sir.

Q. Do you recall whether anyone presided at the meeting?

A. To the best of my recollection I think Mr. Jager did.

Q. And did Mr. Jager make any statement as to the purpose of the meeting? [3]

A. Well, there were many statements thrown back and forth.

Q. I mean at the beginning before the meeting got under way?

A. I wasn't there. I just got in when they called the meeting. I believe I arrived the last one.

Q. I see; and did you represent any firm at that meeting? A. California Slide Fastener.

Q. Were you an officer of that firm at that time?

A. I was.

Q. What was your position?

A. Secretary and Treasurer.

Q. Now, can you tell us what subjects were discussed at the meeting?

A. Well, primarily the prices of zippers.

Q. Any particular type zipper?

A. Those in question were what we called a skirt zipper, 7-inch, pin lock.

Q. And do you recall what Mr. Jager said about the price of the 7-inch zipper?

A. The smaller manufacturers, of which I was

Defendant's Exhibit "AK"—(Continued)

(Deposition of Robert Eisenberg.)

one, were selling 7-inch skirt zippers for $4\frac{1}{2}$ cents. Talon's price at the time for a pin lock zipper such as was the equivalent of ours was selling for five cents. He said that he understood there was a lot of chiseling going on. By that, [4] there were premiums given, inside prices, and so forth. They had—that is, they, Talon, had a cheaper zipper in the East called Wilzip.

Q. Did Mr. Jager say that?

A. Yes, definitely.

Q. That was his statement?

A. Yes. He said, "You know what is going on in the East with the Wilzip zipper." He says, "I don't want to bring it into town although," he said, "the company may do so. If the differential will remain about one-half a cent—" In other words, if we kept our price at $4\frac{1}{2}$ cents and Talon at five cents, he claimed that they would stand this reduction because of their advertising, their name and reputation.

Q. Did he say what was happening in the East with respect to the Wilzip zipper?

A. Yes. I forget exactly how much. He said Wilzip was being sold for 3.75 or three and a half, I don't recall exactly how much, and that they would be compelled to bring it in if the chiseling kept on.

Q. When you say "bring it in," bring it in where?

A. Into the Los Angeles area. They were losing

Defendant's Exhibit "AK"—(Continued)

(Deposition of Robert Eisenberg.)

a great deal of their skirt trade and they weren't going to just stand by and do so.

Q. Did he say anything as to the effect of the sale of the Wilzip zipper in the East with respect to smaller manufacturers there? [5]

A. Yes. He definitely pointed out that it was raising havoc there, a number of them were dropping by the wayside and going out of business because they couldn't meet the price they were selling it for.

Q. Was any complaint made by Mr. Jager about premium sales and discount sales? A. Yes.

Q. By the smaller manufacturers?

A. Yes, he heard that they were being done.

Q. And he complained about it?

A. He complained about it, yes, and one of the other men at the meeting questioned Mr. Jager or rather told Mr. Jager that they were offering all sorts of inducements in advertising and that was Talon's form of premium.

Q. Do you remember who said that?

A. Yes, Mr. Napp.

Q. Now, after these statements were made by Mr. Jager did you make any response to what he had said? A. Yes, I did.

Q. Will you please tell us the substance of what you said to him?

A. At that time a firm by the name of Conmar Zipper were also offering premiums in the manner of closeouts. In other words, they would say they

Defendant's Exhibit "AK"—(Continued)

(Deposition of Robert Eisenberg.)

had 10,000 or 20,000 zippers of a color or size to close out and they will close it out at below the market price at that time. [6]

So I told Mr. Jager that that was the type of competition that I had to contend with and therefore I would have to meet competition and not sit by and see the market run away from me.

Q. Did Mr. Jager reply to that statement?

A. He says he knew about it, he had heard about it.

Q. Do you recall what statements were made by Mr. Napp?

A. I remember in the discussion one particular statement that was made, that Talon or California Slide or anybody else couldn't tell him what to sell his zipper for. If the market called for it and he wanted to sell it for two cents, he was going to do it. That is when the question arose about the premium.

Q. Did Mr. Napp have anything to say about the Wilzip zipper? A. In what respect?

Q. Well, when that discussion was taking place did he offer any comments?

A. No, nothing in particular except that he was going to sell his zipper to compete with anyone.

Q. Did Mr. Jager make any statement about any communication he had received from the Conmar Company concerning this meeting?

A. I believe that a Conmar man was asked to attend the meeting, I believe Mr. Tarshes was then the General [7] Manager of the Los Angeles Divi-

Defendant's Exhibit "AK"—(Continued)
(Deposition of Robert Eisenberg.)

sion, and for some reason or other he couldn't attend or he wasn't there, I don't know.

Q. Do you recall what statements were made by Mr. Lipson during the discussion about the Wilzip zipper and the prices of zippers on the Coast?

A. Mr. Lipson said at that time that he had not chiseled or cut prices regardless of any zipper that came into the market, up to that time; that in order to come out whole, as he put it, he would have to make a cheaper zipper and not give them the quality that he tried to maintain.

Q. Did he say what he was selling his 7-inch skirt zipper for?

A. Yes, he was selling his 7-inch skirt zipper at that time at 4½ cents.

Q. And did Mr. Jager make any statement as to that price that Mr. Lipson was selling his zipper at?

A. I don't quite understand you.

Q. Well, did he say he approved of that price or disapproved of it?

A. Well, he said if we kept it at 4½ he wouldn't bring the Wilzip zippers in as long as he could help keep it out of town, but if there was any—if he heard there was any more chiseling going on he was going to bring it in.

Q. Did Mr. Jager say anything about the price that Talon was selling its 7-inch skirt zipper at at that time?

A. Their pin lock, I believe, was selling at five

Defendant's Exhibit "AK"—(Continued)

(Deposition of Robert Eisenberg.)

[S] cents, and their automatic lock was somewhere around six cents or $6\frac{1}{2}$ cents. I am not sure.

Q. Now, you have appeared to testify today pursuant to a subpoena served upon you; isn't that correct?
A. Correct, sir.

Q. Now, at or about the time of this meeting did the California Slide Fastener Company sell 7-inch zippers at less than 4.50 per hundred?

A. Yes.

Q. What price were they sold at?

A. They were sold at 4.50, with a discount, less a special discount.

Q. And do you know at that time what the Conmar closeout zippers were selling for?

A. Only by hearsay, sir.

Q. Well, it was below 4.50 per hundred?

A. Yes. Some people claim it went as low as 3.75. I had never seen a bill and I didn't know, only by word of mouth.

Q. Do you recall what your net price was after figuring a discount, when you sold your zippers for 4.50 a hundred with a discount?

A. I believe it was about 4.30.

Mr. Graham: I think that is all, Mr. Eisenberg.

Cross Examination

Q. (By Mr. Lyon): Mr. Eisenberg, what is your present occupation?

A. I am now employed by Union Slide Fastener.

Defendant's Exhibit "AK"—(Continued)
(Deposition of Robert Eisenberg.)

Q. How long have you been employed by Union Slide Fastener?

A. Oh, I believe during July of this year, of 1952.

Q. And in what capacity?

A. I am a Sales Manager.

Q. This meeting that was held in the latter part of 1949, was that meeting suggested by you?

A. No.

Q. Mr. Napp has testified that you telephoned him and invited him to the meeting. Is that a fact?

A. I might have—yes, I believe it is so.

Q. When you were selling your 7-inch skirt zipper at a discount so as to net 4.30 a hundred, can you tell me what your cost figures were per hundred?

A. I think it is a little difficult to tell you now what they were at that time, sir.

Q. Have you any idea? A. Yes.

Q. Would you care to—

A. I think they must have been around 4½ cents at the time.

Q. So you were actually selling at a loss; is that [10] a fact? A. Yes.

Mr. Lyon: That is all.

Mr. Graham: I think that is all. The same stipulation, that the deposition may be signed before any Notary Public.

Mr. Lyon: So stipulated. [11]

[Endorsed]: Received Dec. 6, 1952.

DEFENDANT'S EXHIBIT "AL"

[Title of District Court and Cause.]

DEPOSITION OF ISADORE O. NAPP

Deposition of Isadore O. Napp, called as a witness on behalf of the defendant, taken on Tuesday, the 25th day of November, 1952, at the hour of 2:00 o'clock p.m., at 5225 Wilshire Boulevard, 10th floor, Los Angeles, California, pursuant to Notice, before H. A. Singeltary, a Notary Public in and for the County of Los Angeles, State of California.

Appearances: For the Plaintiff: Lyon & Lyon, by Charles G. Lyon, Esq. For the Defendant: Solomon Kleinman, Esq., Fulwider, Mattingly & Babcock, William J. Graham, Esq., by William J. Graham, Esq. [1]*

ISADORE O. NAPP

called as a witness on behalf of the defendant, being first duly sworn, testified as follows:

Direct Examination

Q. (By Mr. Graham): Mr. Napp, will you please state your full name and address?

A. Isadore O. Napp, 10354 Wilshire Boulevard. Do you want my business address, too?

Q. No, that is all right. What is your occupation at the present time, Mr. Napp?

A. We manufacture zippers and sewing thread.

Q. And do you do that under a firm name?

A. Yes, Roxy Company.

* Page numbers appearing at top of page of Original Deposition.

Defendant's Exhibit "AL"—(Continued)
(Deposition of Isadore O. Napp.)

Q. Before we go further I would like to have you understand the nature of this proceeding. I am going to ask you questions, you are going to answer those questions, having been sworn by the Notary Public, and the Notary will transcribe your answers, the questions and your answers, and you will be given a copy of the deposition and have an opportunity to correct it, if you wish, and then you will sign it and swear to it before a Notary Public and it will become a permanent part of the court record in this case. Mr. Lyon represents the Talon Company and he has the right to object to any questions that he considers improper. He also has the right to cross examine you. [2]

Does that explain it to you so that you understand exactly what the proceeding is? A. Yes.

Mr. Graham: Have I covered everything, Mr. Lyon?

Mr. Lyon: I think that covers it.

Q. (By Mr. Graham): Mr. Napp, you have been in the slide fastener business for a number of years, haven't you? A. Since 1934.

Q. And how much of that period was spent on the Pacific Coast? A. Since 1934.

Q. Since 1934? A. Yes.

Q. You are one of the pioneer zipper manufacturers in this area? A. The first one.

Q. The first one? A. Yes.

Q. Do you recall attending a meeting at the office of Talon in the month of September, 1949?

Defendant's Exhibit "A1."—(Continued)

(Deposition of Isadore O. Napp.)

A. I know it was in 1949 but I wouldn't recollect the month.

Q. You wouldn't recall the exact date?

A. That is right.

Q. It was in the latter part of 1949?

A. It was in the latter part of 1949. [3]

Q. And do you recall how it came about that you attended that meeting?

A. I was called by Mr. Eisenberg from the Cal Fastener Company and he invited me to the meeting.

Q. And did he say who had arranged the meeting?

A. He said that he had arranged the meeting.

Q. And did he tell you that other zipper manufacturers were being invited?

A. He expected Mr. Lipson there.

Q. Did he say that others were being invited besides Mr. Lipson? A. There were no others.

Q. There were no others in the business at that time? A. Manufacturers here? No.

Q. Well, you did attend that meeting?

A. Yes, I did.

Q. And do you recall the names of those who were present at the meeting and the companies they represented?

A. Mr. Lipson of the Union Slide Fastener, Mr. Eisenberg from the California Fastener, my brother-in-law Mr. Bogash and myself, and the Talon people had Mr. Jager and Mr. Detweiler I believe it was.

Defendant's Exhibit "AL"—(Continued)
(Deposition of Isadore O. Napp.)

Q. And do you recall whether anyone presided at that meeting?

A. There was no formality. We were just [4] sitting around a table talking.

Q. Well, do you recall who opened the meeting? Was any statement made by anybody as to the purpose of the meeting?

A. I believe it was Mr. Eisenberg who started it off by trying to explain the fact that there were rumors around the Talon people were going to bring out the Wilzip on the Pacific Coast and if there was a way of preventing the Wilzip from coming out here.

Q. And did either of the Talon representatives answer that question?

A. No, they were evasive as I would call it. They didn't say yes or no. They were quite evasive.

Q. Well, was there much talk about the Wilzip zipper?

A. There was quite a lot of talk about the Wilzip.

Q. Well, did Talon's representatives say anything about it?

A. No, they didn't. They said it was quite a successful fastener in the East but they didn't think it was necessary to bring it out to the Coast yet.

Q. Did they say whether or not they were interested in bringing it out to the Coast?

A. They thought they might be forced to do it

Defendant's Exhibit "AL"—(Continued)

(Deposition of Isadore O. Napp.)

if competition—if we were not going to stop cutting our throats. [5]

Q. Do you recall who made that statement?

A. It wasn't a direct statement. It was just—I don't even know how to put it. It was almost a direct conversation, you know.

Q. Well, did you have anything to say on that subject?

A. Yes, I did. I tried to convince everybody around the table that cut throat competition is a drastic thing, you hurt yourself more than you do anybody any good, and I tried to point out that the Wilzip was being sold at large in the Eastern territory, and if they bring it out here it wouldn't do neither the Union Fastener nor the Cal Fastener nor ourselves any good; and I also tried to point out to Talon that they would be cutting their own throats, underselling their own product.

Q. Do you recall what you said to the Talon people? A. Just what I'm saying now.

Q. That is about the substance of what you said?

A. Just about that.

Q. Was there a discussion about the price of 7-inch skirt zippers at that meeting?

A. Oh, there were quite a few discussions there. Mr. Eisenberg accused Mr. Lipson of underselling him. Mr. Lipson accused me of underselling him, and there was what you would call a free-for-all conversation.

Defendant's Exhibit "AL"—(Continued)
(Deposition of Isadore O. Napp.)

Q. Do you recall at that time what Talon [6] was selling its 7-inch zipper for?

A. I think it was 7.3 or 7.8, I'm not quite sure.

Q. Did the Talon representatives say anything about the price at which you and the other manufacturers were selling the 7-inch zipper?

A. No, I can't recollect that at all.

Q. Now, you said that you had told the meeting that the Wilzip zipper was being sold in the East. Do you remember whether or not the Talon representatives said anything about the effect of the Wilzip zipper on the smaller manufacturers in the East?

A. No, they didn't say anything like that. There was no statement of that sort at all, that I can remember at all.

Q. Do you remember by whom the meeting was called? I know that you said that you heard from Mr. Eisenberg. Do you recall that anybody in particular had called the meeting?

A. No, I don't.

Q. Was anybody present at the meeting from the Apparel Manufacturers Supply Company, Mr. Abramson? A. No.

Q. Do you recall at that time whether the Conmar Fastener Company was selling its zippers at a very low price in the Pacific Coast market?

A. No, their price was similar to—around the price of Talon, but they did have some closeouts,

Defendant's Exhibit "A17"—(Continued)

(Deposition of Isadore O. Napp.)

or they [7] called it seconds, where they gave a 20 per cent discount.

Q. Was there a discussion at the meeting about premium sales and discount sales of zippers?

A. I think that was brought out at the meeting by either Mr. Lipson or Mr. Eisenberg, maybe myself. I'm not quite sure.

Q. Well, do you recall making any statement to the Talon representatives that Talon in effect was making a premium sale by giving publicity in newspaper advertising to their large customers?

A. Would you mind repeating that?

(Record read as follows:

"Q. Well, do you recall making any statement to the Talon representatives that Talon in effect was making a premium sale by giving publicity in newspaper advertising to their large customers?")

The Witness: There was a discussion about that. I don't know who made that statement, but it was pointed out to the Talon people that advertising for different customers does bring a reduction in price. That was pointed out, but I can't recollect by whom.

Q. Well, do you recall whether the Talon representatives made any complaint about premium sales or discount sales?

A. No, I don't recall that.

Q. Do you recall prior to that meeting what [8] price you were selling 7-inch zippers at?

A. I believe it was around 5.50 a hundred.

Defendant's Exhibit "AL"—(Continued)
(Deposition of Isadore O. Napp.)

Q. 5.50 a hundred? A. Yes.

Q. Now, do you remember what Talon was selling its pin lock zipper at?

A. I think it was 5.90 if I'm not mistaken.

Q. And did you at that time reduce your price, prior to the meeting? A. Oh, sure.

Q. Do you recall how much you reduced it?

A. No, at that time I think we were still 5.50.

Q. Now, the other gentlemen present at the meeting had something to say, too, about the subject under discussion, didn't they?

A. Oh, yes, they did.

Q. Do you recall what Mr. Eisenberg said?

A. It was also a general conversation about the Wilzip situation and what they are going to accomplish by bringing it out here. It wouldn't make a bit of difference what the price was going to be, I mean we would still have to be in the business and we would have to undersell the Talon product because of the advertising they splashed for their customers; and Mr. Eisenberg tried to pin down the Talon outfit, what they intended to do about it, and there was no reply from them; and finally I got angry because it [9] is kind of silly trying to pin a man down to something when you can't really do anything; and after an hour's conversation down there going around a circle, I said, "First of all, you are dealing with an outfit that is a national outfit and the gentlemen sitting over here are just little

Defendant's Exhibit "AL"—(Continued)

(Deposition of Isadore O. Napp.)

screws in a big machine. They can't tell you what the policy is going to be, but as long as you are going to behave yourselves and not try to undersell the Talon people to too large an extent I don't think they are going to bring out the Wilzip."

I said that and they were just sitting there like dumbbells.

Q. Who was that?

A. Mr. Jager and Mr. Detweiler.

Q. Did you make any statement as to what you would do if the Wilzip zipper were introduced on the Pacific Coast market?

A. I did. I said the same thing, "It makes no difference what you are going to sell the Wilzip for, we will have to undersell you on account of the advertising and the name."

Q. Did the Talon representatives or either of them make any statement that they wouldn't bring the Wilzip zipper to the Coast, wouldn't introduce it to the Coast market?

A. No, not that I know of. [10]

Q. Well, did they make a contrary statement, that they would?

A. They didn't say either way.

Q. But they did say it was being considered?

A. They tried to impress upon us that Wilzip is being sold in the East and so far they didn't bring it out here and they don't know what to do about it. I mean, they may if they are forced to do it.

Defendant's Exhibit "AL"—(Continued)
(Deposition of Isadore O. Napp.)

Q. Do you remember at any time prior to the meeting a reduction in the price of Talon pin lock zippers to \$5 a hundred?

A. There was none prior to the meeting. I think it was \$5.90 at that time or 5— 5.90 I believe. I think that reduction came later.

Q. Do you know what their automatic slider price was? A. A half cent more.

Q. You are not confusing the price of the pin lock with the price of the automatic slider at that time?

A. No. There always was a variation from a cent to a half a cent between the pin lock and automatic lock.

Q. Did Mr. Jager say anything about not being opposed to the sale of the zippers by other manufacturers at 4.50 a hundred?

A. No, I don't believe that Mr. Jager made any statement as to prices, but he did say he was not opposed to [11] the independent fellow being about a half cent under them in view of their advertising.

Q. Do you know what the Wilzip zipper sold for in the East at the time of the meeting, or just prior to that?

A. I heard all kinds of rumors around four cents, 4.2 or something like that—the 7-inch.

Q. That is right.

A. The rumors extended to even 2.75.

Q. That is \$2.75 a hundred? A. Yes.

Defendant's Exhibit "AL"—(Continued)

(Deposition of Isadore O. Napp.)

Q. Did you make any statement to the effect that you would sell your 7-inch skirt zippers as low as two cents if a price war occurred?

A. No, I didn't say that. I said it wouldn't make a bit of difference what they sell their fasteners for, I would still undersell them.

Q. You are appearing to testify today pursuant to a subpoena served upon you; is that correct?

A. That is right.

Q. And before coming here have you had any discussion with anybody about giving your testimony today, making a deposition?

A. Yes. Mr. Lipson was in to see me a couple of weeks ago, and I told him I didn't think I could do him any good with my testimony here today, because all I intend to do is tell the truth. [12]

Mr. Graham: I'm going to make a note on the record that I move to have that last part of the answer stricken out. It is unresponsive.

Q. (By Mr. Graham): Did you have any discussion with anybody representing Talon?

A. No, I did not.

Q. You haven't talked with anybody in the Talon organization, or with their attorneys?

A. No, sir.

Q. Your firm, the Roxy Company, is in competition with Union Slide Fastener in the zipper business; isn't that correct?

A. That is right.

Mr. Graham: I think that is all I have to ask.

Defendant's Exhibit "AL"—(Continued)
(Deposition of Isadore O. Napp.)

Cross Examination

Q. (By Mr. Lyon): Mr. Napp, a couple of the previous witnesses have referred to what they term a wisecrack that you made at this meeting to the effect that if you found it necessary you would put a gold nugget in each box of zippers.

A. That is true.

Q. And you recall making such a remark?

A. That is right.

Mr. Lyon: That is all.

Mr. Graham: That is all. The same stipulation, that the deposition may be signed before any Notary Public. [13]

Mr. Lyon: So stipulated. [14]

/s/ ISADORE O. NAPP

Subscribed and sworn to before me this 8th day of December, 1952.

[Seal] /s/ FLORENCE J. FARNSWORTH,
Notary Public in and for the County of Los Angeles, State of California. My Commission expires March 22, 1955.

[Endorsed]: Filed Dec. 10, 1952.

DEFENDANT'S EXHIBIT "AM"

[Title of District Court and Cause.]

DEPOSITION OF JOHN T. HAVEKOST

Appearances: William C. McCoy, Esq. Evans & McCoy, Esqs. Bulkeley Building, Cleveland 15, Ohio, and Ralph E. Meech, Esq. Meadville, Pennsylvania, Attorneys for Plaintiff. William J. Graham, Esq. 12 East 41st Street, New York, New York, Attorney for Defendant.

Deposition of John T. Havekost, a witness of lawful age taken on behalf of the defendant in the above entitled cause, wherein Talon, Inc. is the plaintiff and Union Slide Fastener, Inc. is the defendant, pending in the District Court of the United States, Southern District of California, Central Division, pursuant to the notice hereto annexed, before Solomon H. Halpern, a notary public in and for the County of New York, State of New York, at 12 East 41st Street, New York, New York, on the 27th day of November, 1954. [1]*

Mr. Graham: Deposition taken pursuant to notice served upon the plaintiff's attorneys on October 29, 1954, providing for the taking of the deposition on November 13, 1954. Since, the taking of the deposition has been adjourned by mutual consent of the attorneys for both parties to November 27, 1954, at 10 o'clock a.m., at the place designated in the notice.

* Page numbers appearing at top of page of Original Deposition of Record.

Defendant's Exhibit "AM"—(Continued)
(Deposition of John T. Havekost.)

It should be noted on the record that the deposition of the witness, John T. Havekost, was previously taken in this proceeding, but that the stenographer who took said deposition never did produce a transcript thereof, rendering it necessary to retake the deposition.

JOHN T. HAVEKOST

a witness named in the annexed notice, being of lawful age, and being first duly sworn in the above cause, testified on his oath as follows:

Direct Examination

Q. (By Mr. Graham): Will you please state your name and address?

A. John T. Havekost, 33-30 149th Place, Flushing, Long Island.

Q. Mr. Havekost, what is your present occupation?

A. I am what is termed a checker of mechanical engineering drawings. [2]

Q. For what firm?

A. Reeves Instrument Company.

Q. That is your title, checker of—

A. Checker of engineering drawings.

Q. How long have you been employed in that capacity? A. Two years.

Q. What was your occupation previous to that?

A. Previous to that I was a designer of auto-

Defendant's Exhibit "AM"—(Continued)

(Deposition of John T. Havekost.)

matic and high speed machinery, mainly zipper machinery.

Q. Was that for the Reeves Instrument Company?
A. No.

Q. Will you state what company that was for?

A. Well, there were several companies. To begin with, it was for the Zenith Development Company, U. S. Rubber Company, and Slide Lock Company.

Q. Do you recall when you first went with the Zenith Company?

A. Well, I think sometime in '39. Oh, I should judge, let me see, if I can recall correctly, it must have been about November or October of 1939.

Q. For how long were you employed by the Zenith Company?

A. Oh, I would say until 1941, I believe, if my memory doesn't fail me.

Q. Was the correct name of that company the Zenith Manufacturing Company?

A. Zenith Development Company. [3]

Q. While you were employed by that company, can you state who the principal stockholder of that company was?

A. Well, I don't know who the principal stockholder was, but the man that was in charge over me, that I know, was Mr. David Silberman.

Q. Were you employed by Mr. Silberman when you took your job with that company?

A. Yes, I was hired by Mr. Silberman, if you want to call it such.

Defendant's Exhibit "AM"—(Continued)
(Deposition of John T. Havekost.)

Q. Will you state the circumstances under which you met Mr. Silberman and secured employment with the Zenith Development Company?

A. Well, he came—I used to have an engineering office at 154 Nassau Street, under the name of the Havekost Engineering Company, and through a mutual friend, he was brought to me for me to do some work for him, which I did, and later on it developed into him asking me to close my office and come with him.

Q. What was the nature of the work that you did for him before you were employed by Zenith?

A. Designing parts of machinery for zippers.

Q. When you left the Zenith Manufacturing Company, what company did you go with?

A. I went with Slide Lock.

Q. Who was in charge of the work of the Slide Lock Company?

A. A party by the name of Max Lange. [4]

Q. How long were you with the Slide Lock Company?

A. I was with them, I think, to the end of '43, I'm not sure. I don't recall the actual date. Maybe '44. I was with them approximately two years, I think.

Q. I show you a document which is a copy of what appears to be an assignment, bearing the signature of Max H. Lange, and call to your attention that the date on that document is December 8, 1948, and ask you if that refreshes your recollection as

Defendant's Exhibit "AM"—(Continued)

(Deposition of John T. Havekost.)

to the period you served with the Slide Lock Corporation? A. I recall signing this.

Q. Do you recall having signed the original of this document? A. Yes.

Q. To whom did you deliver the original of this document?

A. I think that the original document was delivered to a Mr. Davis, if I am not mistaken.

Q. Was he an officer of Slide Lock?

A. That I don't know. See, I was no longer connected with Slide Lock when that was signed. I had left slide lock, I think it was '44, the early part or the latter part of '44, I'm not sure.

Q. Do you recall, Mr. Havekost, having produced this document at the taking of your deposition in December of 1952, in the Sanford Hotel in Flushing, New York?

A. I was never in the Sanford Hotel. [5]

Mr. Burkitt: January 3, 1953.

The Witness: I don't recall being in the Sanford Hotel.

Q. You don't recall having given a deposition before in this proceeding?

A. I think I gave a deposition out in Jamaica.

Q. If you recall, we met in Jamaica, and in order to have more adequate quarters to take the deposition, we drove over to the Sanford Hotel?

A. That's right.

Q. Do you recall having produced this document at that time?

Defendant's Exhibit "AM"—(Continued)
(Deposition of John T. Havekost.)

A. Well, you have it. I must have produced it.

Q. It bears a notation "Defendant's Exhibit 2 For Identification," with the signature of Helen Jean Paul, and I offer it for identification as Defendant's Exhibit 1 for identification on the taking of this deposition.

(Document dated December 8, 1948, marked Defendant's Exhibit 1 for identification.)

Q. I show you another document, Mr. Havekost, which appears to be a copy of an affidavit made by you, which bears some pen and ink notations in the margin and in the body of the document, and ask you if you recognize that document?

A. That refreshes my mind; yes, sir.

Q. Do you recall having executed the original of that document? [6] A. Yes.

Q. Is the handwriting on this copy your handwriting? A. That's my handwriting.

Mr. McCoy: All objected to as leading.

Q. There is some handwriting on the document. Will you state whether or not that is your handwriting? A. It is.

Q. Do you recall to whom you delivered the original of this document?

A. That I believe was delivered at the same time this other document was that you have. It was in Mr. Lange's office, there, to Mr. Davis. I believe it was at the same time, if I recall correctly.

Mr. Graham: I offer this document as Defendant's Exhibit 2 for identification.

Defendant's Exhibit "AM"—(Continued)

(Deposition of John T. Havekost.)

Mr. McCoy: It is not offered, is it?

Mr. Graham: For identification.

Mr. McCoy: Are you offering the document, or are you merely marking it for identification?

Mr. Graham: I'm offering it for identification.

Mr. McCoy: Objection. May I see the document. Objected to as self-serving statement so far as the matter appearing on the face of the document is concerned. No foundation has been laid for the material set forth in this document. It is further objected to because the witness is present, and this written paper, Defendant's Exhibit 2, is [7] not in support of any oral testimony given by the witness, and is setting forth material that is very leading in character, and the witness has established no independent recollection of the statements of the document in this proceeding. And the date stated in the document, and the date of the document is after the issuance of the patent in suit, 2,437,793.

(Affidavit marked Defendant's Exhibit 2 for identification.)

Q. After you left the employment of the Slide Lock Company, what position did you take, with what company?

A. I went with the U. S. Time.

Q. U. S. Time corporation? A. Yes.

Q. What was the nature of your duties there?

A. Designing automatic machinery.

Q. Would that machinery have anything to do with the manufacturing of zippers? A. No.

Defendant's Exhibit "AM"—(Continued)
(Deposition of John T. Havekost.)

Q. After you left the U. S. Time Corporation, did you work for any other company before you went with the Reeves Instrument Company?

A. Yes, I worked for what they term a jobbing engineering concern. I worked for them three months. Let's see if I can recall the name. I think it's the Allied Drafting Service, [8] I'm not sure. After that I worked for U. S. Rubber.

Q. What was the nature of your duties at the U. S. Rubber Company?

A. Designer of a high speed automatic zipper machine.

Q. How long were you with the U. S. Rubber Company?

A. I was with them approximately a year and a half.

Q. Then you went with the Reeves Instrument Company? A. No, then I went west.

Q. Did you take a vacation

A. I took a vacation, that's right.

Q. After you had had your vacation, you went with the Reeves Instrument Company? A. No.

Q. Will state where you went?

A. I went with the Devenco Company. They are an engineering firm that does special design work for companies that want work done.

Q. Do you hold a degree in engineering?

A. No.

Q. What line would you say your entire business experience has been in?

Defendant's Exhibit "AM"—(Continued)

(Deposition of John T. Havekost.)

A. The mechanical field.

Q. When you were employed by the Zenith Development Company, did you have a contract with that company? A. I did. [9]

Q. Was the contract in writing?

A. It was.

Q. Do you have any evidence of that contract at the present time?

A. I don't know. I may have it at home, I'm not sure. After all this stuff, and the years that have passed, I might have destroyed it as not being essential any longer.

Q. If you do find a copy of such contract, will you produce it as part of your testimony?

Mr. McCoy: Objected to, unless the witness will be reproduced to make it a part of his testimony.

Mr. Graham: Can we agree, then, that if he should find such contract, we'll adjourn the taking of his testimony?

Mr. McCoy: We would like to see what he produces.

Mr. Graham: We'll resume the taking of his testimony at that time?

Mr. McCoy: Let's see what he produces to see whether we can let that document in. But it can't be a part of the testimony unless it be produced during the taking of testimony. Is the witness now testifying under subpoena duces tecum?

Mr. Graham: No, he is not.

Defendant's Exhibit "AM"—(Continued)
(Deposition of John T. Havekost.)

Mr. McCoy: He was at the prior hearing, was he not?

Mr. Graham: That's right. [10]

Mr. McCoy: And the witness was then unable to produce such a document, isn't that true?

Mr. Graham: That is correct. No such document was produced at the taking of the first deposition.

Q. Do you recall the terms of your contract with Zenith Development Company?

A. No, I can't recall the exact terms. It's been so long ago that I can't recall them. All I know is that I had a contract that protected me whatever I developed.

Q. Were you hired for any specific purpose?

A. Specific purpose in what way, the design of special machinery or zipper machinery?

Q. Yes.

A. Yes, I was hired for that purpose.

Q. What was the particular type of machine that you were hired to design?

A. I was hired to design a machine that would cut from the strip, rather, a strip of material, that is, metal, which had formed on it what you might call certain tits that formed the head of a zipper unit. It was fed into a machine to be cut off and attached to the tape. That was the purpose of the machine.

Q. When you entered the employment of the

Defendant's Exhibit "AM"—(Continued)

(Deposition of John T. Havekost.)

Zenith Company, were any similar machines exhibited to you? A. No.

Q. Had you been familiar with zipper manufacturing [11] machinery prior to your employment?

A. Well, I had a working knowledge of it back in 1938. But beyond that, why, I can't say that I did anything with it.

Q. Were you familiar in general with zipper manufacturing machines?

A. I was familiar with, oh, two types, you might say.

Q. What were those types?

A. Well, one was the pre-worked metal strip, and the other was the punching die job which stamped out the units, which were hopper fed.

Q. Were you told at any time by Mr. Silberman that he wanted to develop a machine that would not be an infringement of the Conmar machine?

A. Well, he asked me could I probably produce something, and I told him I could.

Q. What did you do along the lines of producing such a machine?

A. Well, I developed a machine using a principle of the automobile engine.

Q. Can you state what that principle was?

A. Well, that principle was connecting your rods which were hooked onto your punchers with a crankshaft for raising and lowering and cutting off the element, and it produced two slides operated

Defendant's Exhibit "AM"—(Continued)
(Deposition of John T. Havekost.)

from the same movement, which clamped the unit to the tape. [12]

Q. Was that what you would call a punch block construction? A. You could call it that.

Q. Did Mr. Silberman discuss the work you were doing and point out any problems that he wanted to have solved?

A. Well, Mr. Silberman didn't have too much instruction what to do with it. He left me on my own.

Q. Did Mr. Silberman indicate to you in any way that he had been working on the problem of developing a new machine?

A. Not that I know of.

Q. Did you familiarize yourself in any way with zipper machines that were already in existence, either by studying the machines themselves or drawings of the machines?

A. Well, I mainly studied from drawings or pictures of machines. I didn't see any machine whatsoever.

Q. Did you, as the result of your work for Zenith Development Company, develop any machine such as you were hired to do?

A. Yes, I did.

Q. Do you recall when you completed that development?

A. I think it was when the machines were built or while I was doing the engineering.

Defendant's Exhibit "AM"—(Continued)

(Deposition of John T. Havekost.)

Q. When did you complete your engineering work?

A. The engineering work was completed in the early part of 1939, six months after I had taken the job with Mr. Silberman.

Q. I refer you again to Defendant's Exhibit 2 for identification, [13] which refers to your employment by Zenith Manufacturing Company from December 1939 to February 1953, and ask you if that refreshes your recollection as to the date on which you completed your engineering work?

A. Yes. The engineering work was completed in 1940, around the end of August, the early part of October—September.

Q. Do you know whether or not a machine was built? A. Yes, the machine was built.

Q. In accordance with your engineering work?

A. Right.

Q. Did you prepare drawings?

Mr. McCoy: All objected to as leading. Let the witness tell what he did.

Q. Did you prepare any drawings?

A. Yes.

Q. What did you do with those drawings?

A. They were sent to a firm to built the parts.

Q. Do you recall the name of that firm?

A. It's in Miami. I think it's the Southern Engineering Company in Miami, Florida.

Q. Did you send your drawings to that company

Defendant's Exhibit "AM"—(Continued)
(Deposition of John T. Havekost.)

on your own responsibility, or were you directed to do so by anyone?

A. I was directed to do so by Mr. Silberman.

Q. Do you know whether or not the parts were made? A. They were. [14]

Q. Do you know what happened to the parts?

A. Yes. They were shipped to the Hared Manufacturing Company of Philadelphia, who, in turn, assembled the machines.

Q. Did you at any time visit either of those companies? A. Yes.

Q. Did you have any discussion with any of their representatives with respect to the machine or the parts of the machine?

A. In reference to the parts of the machine, yes.

Q. Did you have any part in the erection of the machine?

A. Only to issue instructions how to go about it.

Q. Did you see the machine when it was constructed? A. I did.

Q. Did you see it in operation? A. I did.

Q. During this period while you were doing engineering work on a zipper manufacturing machine, did you at any time consult with a patent attorney?

A. In regards to what, to patenting the machine?

Q. In regard to patenting the work you were doing?

Defendant's Exhibit "AM"—(Continued)

(Deposition of John T. Havekost.)

A. No, that was simply up to Mr. Silberman. I spoke to him about it.

Q. You did discuss it with Mr. Silberman?

A. Yes.

Q. Did he ask you for any written information concerning your work? [15]

A. No, he had the drawings, and I explained to him what I thought had patentable matter in it.

Q. Did he ask you questions about it?

A. He might have during the course of conversation.

Q. You yourself did not visit any patent attorney or discuss the matter with any patent attorney?

A. No.

Q. Did you discuss the patenting of the machine with Mr. Silberman? A. I did.

Q. What did he say with regard to that?

A. Well, he just let it hang fire. He didn't give me any definite answer about it at all.

Q. While you were with the Zenith Company doing this work, did you receive a salary?

A. I did.

Q. Did you receive any additional compensation? A. I did.

Q. What was the nature of that compensation?

A. Well, I don't know what you can call it, whether it was a bonus or an actual outright receipt for some royalties or something for the machines. That I don't know.

Defendant's Exhibit "AM"—(Continued)
(Deposition of John T. Havekost.)

Q. Do you recall when you began to receive additional compensation?

A. It was more or less around the Holidays.

Q. Of what year?

A. It must have been around the end of 1940, I think.

Q. Was that after you had completed your engineering work on the machine that you designed?

A. And after they were running, yes.

Q. After the machines were operating?

A. Yes.

Q. Was that additional compensation paid in one lump sum or was it periodic compensation?

A. It was paid in one lump sum.

Q. Do you recall how much that was?

A. I'm not sure. No, I don't recall.

Q. Do you recall when you received it?

A. I think it was around the Holidays.

Q. Of what year? A. Of 1940.

Q. You stated before, Mr. Havekost, that you were employed for the purpose of building, of designing a high speed zipper manufacturing machine, and you said something about applying an automotive principle to the construction of the machine. Did the machine that you designed have that construction? A. It did.

Q. Can you state in general terms what the principle of the machine was?

A. Well, it had a closed crankcase in which there was a [17] drive shaft in it, and hooked onto

Defendant's Exhibit "AM"—(Continued)

(Deposition of John T. Havekost.)

the drive shaft was connecting rods which operated a plunger like a piston. The connecting rods were readily detached from the piston. And that's the principle I used.

Q. After the machine was constructed and you saw it operate, did it perform the function for which you had designed it? A. It did.

Q. Do you recall the direction in which the power delivery of the machine that you designed was given when the machine was in operation? Was the power delivery vertical or was it horizontal?

A. Vertical.

Q. Do you recall how many reciprocating parts that machine had?

A. Well, I should say all told, the main reciprocating parts amounted to approximately twenty, twenty-five.

Q. Do you recall what some of them were?

A. Well, the ratchet feed was one. The clamping of the units was another. The movement of the ram or punch was another. And the feeding of the material was another.

Q. Where was the source of power for moving all these reciprocating parts?

A. There was a motor strapped, rather mounted under the machine proper. [18]

Q. Were the parts connected in any way, the reciprocating parts?

A. Yes, they had to be connected as a unit.

Q. And to what were they connected?

Defendant's Exhibit "AM"—(Continued)
(Deposition of John T. Havekost.)

A. To the drive shaft.

Q. Did the drive shaft operate all of the reciprocating parts? A. It did.

Q. Did the machine that you designed have any effect upon vibration? A. In what way?

Q. Was the vibration considerable, or was it just a limited vibration?

A. The usual vibration of a machine of that type.

Q. Do you recall whether the punching operations of that machine were all operated by one part, or whether there were several parts?

Mr. McCoy: Objection. There has been no testimony as to any punching operation of this machine.

Q. Did this machine that you designed involve a punching operation? A. It did.

Mr. McCoy: Same objection.

Q. How were those punching operations actuated?

A. Through the crankshaft and connecting rods.

Q. When did you sever your connection with the Zenith Development Company?

A. Well, approximately, I think it was in '42 sometime. It might have been '43, I'm not definitely sure. It was after the war when we couldn't get any more material.

Q. After the war started?

A. After the war started. I think we went into it in '41, and it came to about '42 until it caught up to us, and it was in '42, '43, sometime in there.

Defendant's Exhibit "AM"—(Continued)

(Deposition of John T. Havekost.)

Q. What kind of work were you doing after you had designed this machine that we have been talking about? A. With Silberman?

Q. That's right.

A. Well, I was supervising the construction, and also watching the material and taking care of little odds and ends that might pop up.

Q. You were supervising the construction of the machines? A. Correct.

Q. According to the design that you had developed? A. Correct.

Q. Do you know how many such machines were constructed?

A. Oh, approximately, I think there were six.

Q. Were those machines sold, or were they used by the Zenith Development Company?

A. That I don't know. After the Zenith Development [20] Company had them built, and all that, I don't know what arrangement was made with the companies that used them.

Q. I show you, Mr. Havekost, a copy of United States Letters Patent, No. 2,437,793, issued to D. Silberman, and ask you if you are familiar with that?

Mr. McCoy: Objection. This is the patent in suit. The witness is an engineer and capable of making his own drawings. My recollection of the former proceedings is that the patent itself was shown to the witness and he was asked leading questions about the type and kind of machinery that he de-

Defendant's Exhibit "AM"—(Continued)
(Deposition of John T. Havekost.)

veloped as compared with the drawings and there is no foundation laid as to any machine of that character thus far in this examination. It's an extremely leading form of testimony. All the documents produced are subsequent to the issuance of that patent, and no drawing is produced made by the witness, no specific machines identified. The witness is not qualified as a patent expert.

Q. Are you familiar with that patent, Mr. Havekost?

A. I have read it over and went through it. If you call that familiar, yes, to that extent.

Mr. Graham: I'll offer that for identification.

(U. S. Letters Patent No. 2,437,793, marked Defendant's Exhibit 3 for identification.)

Q. Mr. Havekost, do you have in your possession any [21] drawings that you made of the machine you designed for the Zenith Company?

A. I may have, I'm not sure. I have been cleaning up after ten or fifteen years after working on those things, cleaning up my records. I might have cleaned it out. I wouldn't say definitely I have it. I can look and see if I can locate them.

Q. Did you at any time make a claim that you had invented the machine described and claimed in the Silberman Patent, No. 2,437,793?

Mr. McCoy: Objection as leading and irrelevant, immaterial, no foundation laid.

The Witness: Do you want me to answer?

Defendant's Exhibit "AM"—(Continued)

(Deposition of John T. Havekost.)

Q. You may answer the question. He has noted his objection.

A. I made a claim as to some of the things in the patent, yes, as riding on my original design.

Q. Do you recall what parts of the patented machine you claimed you had invented?

A. Well, I think the mechanism of the connecting rods operating the punch or ram, the feasibility of disconnecting them very readily for repair work. I think the crankcase, self-contained oil, and all that, the drive shaft. That's all I recall just now.

Q. In Defendant's Exhibit 2 for identification, there is a statement reading as follows— [22]

Mr. McCoy: Objection. It's an attempt to disqualify your own witness by reading from a self-serving statement heretofore marked for identification only, and a statement made after the Silberman patent had issued, and long after the prior work done by the witness had been completed.

Mr. Graham: I'm not offering the testimony for the purpose of discrediting the witness. I'm not asking the question for the purpose of discrediting the witness.

Mr. McCoy: The witness has told his recollection of what he contributed. What counsel is reading is something different.

Mr. Graham: I think it should be stated on the record at this point that Mr. Henry L. Burkitt, attorney, is taking part in this proceeding to the

Defendant's Exhibit "AM"—(Continued)

(Deposition of John T. Havekost.)

extent that he is conferring with plaintiff's counsel in connection with objections to questions propounded by defendant's counsel.

The objections have been noted, and I'll proceed with the questioning.

Q. Mr. Havekost, in Defendant's Exhibit 2 for identification, a statement is made: "I had had special training and years of experience in automotive work and had developed the idea for a zipper chain machine which worked on the principal of an automotive engine incorporating a crankcase, crankshaft and automotive type connecting rods arranged to support and operate the ram." [23]

Was that statement true, Mr. Havekost?

A. Correct.

Q. At the time you made it? A. It was.

Q. In the same document, Defendant's Exhibit 2 for identification, the statement is made: "I never at any time signed over any patent rights or any exclusive rights to use that type machine either to Silberman or firms he was connected with, or to any other person or company, and that I have always maintained the right to use the machines as well as Silberman."

Is that a true statement, Mr. Havekost?

A. That's a true statement, to the best of my knowledge.

Q. In the same document, Defendant's Exhibit 2 for identification, the statement is made: "I was told by Silberman that it was his desire that no

Defendant's Exhibit "AM"—(Continued)

(Deposition of John T. Havekost.)

patent be applied for on this machine. It is only within the past two months that I have learned that Silberman applied for the patent #2-437-793 which is also my first knowledge that Silberman ever claimed to have invented the machine. I was greatly surprised to learn that he claimed to be the inventor of this machine which he, in 1941 and 1942 acknowledged to have been invented by me and for the use of which he paid me royalties then and later."

Q. Was that a true statement, Mr. Havekost, when you made it?

A. Yes, when I made it, it was a true statement.

Q. Did Mr. Silberman acknowledge to you that you were the inventor of the machine that you have described in your testimony, in 1941 and 1942?

A. Well, verbally I don't think you could call it such, but in as much as he didn't ask for a release from me after my telling him it had patentable matter, I assumed that it was acknowledged that I was the inventor of it.

Q. In the same document, Defendant's Exhibit 2 for identification, the statement is made: "A construction incorporating the idea of closing jaws being operated directly by the ram, was invented and developed by me during 1943."

Mr. McCoy: Where is that taken from?

Mr. Graham: Defendant's Exhibit 2 for identification.

Mr. McCoy: What part?

Defendant's Exhibit "AM"—(Continued)
(Deposition of John T. Havekost.)

Mr. Graham: Here (indicating).

Q. Was that a true statement when you made it, Mr. Havekost? A. Yes, sir.

Q. Is it still a true statement, Mr. Havekost?

A. It's still a true statement.

Q. To whom did you make this claim?

A. Well, that was made, I believe, when I made that statement to Mr. Lange.

Q. That's Mr. Lange of Slide Lock Corporation? A. Yes. [25]

Q. I show you Defendant's Exhibit 1 for identification, and ask you if at the same time or approximately the same time that you made that claim, you executed an assignment of your rights in the Silberman patent to Mr. Lange?

A. Well, I read this before. Yes, that's true.

Q. After you left the employment of the Zenith Development Company, did you have any further contact with Mr. Silberman?

A. In regards to what?

Q. With regard to your claim that you had invented part of the machine which he had patented?

A. Not until this question with Mr. Lange came up did I have any further—

Q. Did you after this question with Mr. Lange came up have any contact with Mr. Silberman?

A. Yes.

Q. Did he contact you or did you contact him?

A. He contacted me through Mr. Lange. I don't recall him contacting me directly.

Defendant's Exhibit "AM"—(Continued)

(Deposition of John T. Havekost.)

Q. Did you have any discussion with Mr. Silberman or any meeting with him regarding this matter? A. No.

Q. Did you have any meeting with any representative of Mr. Silberman? A. No, I didn't.

Q. Did you sign any document after these documents? [26] A. I did.

Q. Do you recall when that was?

A. A document was signed in '48. Oh, it might have been six months after, or something, that I—

Q. Would it have been sometime in 1949?

A. It may have been.

Q. Do you recall what that document was?

A. Yes, it was a signing of a release of my claim against this patent.

Q. How did it happen that you signed that release? Did you talk to anybody before you signed it? Did you meet with anybody before you signed it? A. No.

Q. Was the document sent to your home, or did you go someplace to sign it?

A. I went to the office of a lawyer—what was his name again? It was a lawyer retained by Mr. Silberman, I think. Oh, I'll tell you the man. It was the lawyer that defended that communist girl when that case came up.

Q. Archibald Palmer? A. Palmer, yes.

Q. How did you happen to go to his office? Were you requested to go there?

Defendant's Exhibit "AM"—(Continued)
(Deposition of John T. Havekost.)

A. I was requested to go.

Q. By whom? [27]

A. I don't recall those things. I don't recall who it was.

Q. You went to his office as a result of a request made to you? A. Yes.

Q. Had you seen the document that you signed before the day you visited Mr. Palmer's office?

A. No.

Q. Did you read the document?

A. I read it, as far as I can recall, sure.

Q. Was any consideration paid to you for signing that document? A. There was.

Q. You stated that prior to signing that document, you had had no contact with Mr. Silberman?

A. Not that I can recall.

Q. After you left the Zenith Company——

A. Yes.

Q. Had you had any contact with Mr. Silberman since that time? A. No.

Q. Have you discussed this matter with anybody prior to this examination and also on the deposition taken in Flushing on January 3, 1953?

A. I haven't discussed it with anybody except informed the Missus that I was going to these cases.

Q. When you signed the document in Mr. Palmer's office, did you have any discussion with him about it?

A. In regards to what?

Defendant's Exhibit "AM"—(Continued)

(Deposition of John T. Havekost.)

Q. About signing the document or the reason for signing the document?

A. Well, the reason was plainly stated, to go to work and not make any claims against this patent on the basis of my original design.

Q. Did you discuss this matter of the release before you signed it with your own attorney?

A. I didn't have any attorneys.

Q. Did you discuss it with Max Lange?

A. I may have. I wouldn't say definitely.

Q. You don't recall what the discussion was?

A. I don't recall, no.

Q. Do you recall by whom you were employed at the time you signed the release?

A. I was employed—let me see—by the De-
venco Company.

Q. You had left the employment of Mr. Lange?

A. I wasn't employed by Mr. Lange since '45.

Mr. Graham: I'd like it to be stated on the record that I reserve the right to examine Mr. Havekost further at a future time to be specified and upon due notice to the attorneys for the plaintiff.

That's all I have. [29]

Cross Examination

Q. (By Mr. McCoy): Mr. Havekost, in the machine that was designed by you while at Zenith Development Company, that machine was intended to use wire that had the completely formed zipper elements in it, so that the wire could be fed into

Defendant's Exhibit "AM"—(Continued)
(Deposition of John T. Havekost.)

the machine and merely have these elements cut off and attached to the tape, isn't that correct?

A. Well, I don't think you could call it a completely formed element, but it was a formed element, that is, not complete. The completion was made when it was cut from the unit, from the strip of wire, let's put it that way. In other words, the retaining part of the element was formed in the wire.

Q. Did it have recesses formed in the edges of the wire? A. No.

Q. Where the elements were cut off?

A. No.

Q. But the function of the machine was to cut off what we call scoops in the zipper industry, the individual elements? A. Right.

Q. And merely attach those to the tape, isn't that true? A. Correct.

Q. That was the same general operation that was carried on by the Conmar machine at that time, was it not? A. It was.

Q. And the only thing done by the ram of the machine was the cut off tool, was it not? [30]

A. Correct.

Q. When there was the necessity to resharpen or replace a punch, you removed the ram from the connecting rods to sharpen or replace a punch, did you?

A. Well, you removed a ram, what you might

Defendant's Exhibit "AM"—(Continued)

(Deposition of John T. Havekost.)

call a ram from the head which was fastened—the head was fastened to the connecting rods and the ram was attached to the head.

Q. Now, the closing jaws, the jaws for clamping the legs of the scoop or zipper element to the tape, those jaws were operated from the crankshaft, were they? A. They were.

Q. Will you tell us more of the nature of the years of experience in automotive work preceding your connection with the Zenith Development Company, the nature of the work that you did during that period?

A. Well, I started out in the automobile business in 1904 for the Locomobile people in their shops. Then I went to the Lozier people and worked in the shops and in the test sheds with that crowd.

From Lozier, I went with the old Smith & Mabley, in New York City, as assistant to the shop superintendent. Then, during that early period of the automobile game, why there were bankruptcies ever so often, they couldn't seem to get the money, and Smith & Mabley failed.

Then I drove an automobile privately as a chauffeur for a [31] while. Meanwhile, I was studying at Cooper Union for an engineering degree, and I left the driving and went to work for the International Motors. At International Motors, I was on the Board, helping to design the bulldozer truck, and when they moved to Plainfield, I was put in

Defendant's Exhibit "AM"—(Continued)
(Deposition of John T. Havekost.)

charge of heat treating of steel and testing of the steels. In other words, I was head inspector.

After they went into bankruptcy, I went to the Jones Speedometer Company on tooling for making their speedometer. After that, I went to the Norma Ballbearing Company as tool designer on their tooling. From there I took a chief draftsman job with the Duplex Engine Governor Company, who made governing devices for trucks, and so forth. After that concern, I went with the Klein-Schmidt Electric Company as their design engineer and production man. From there I left and opened up my own office in 1920, 1919, and I was in that office—I had my own business for twenty years, until after the crash, I closed up the office in 1938. From thereon, I have been knocking around, if you want to call it such.

Q. At the time you gave your prior testimony in these proceedings in New York, heretofore referred to, you were testifying in response to a subpoena, were you not? A. Yes.

Q. Have you a copy of that subpoena?

A. Have I? [32]

Q. Yes. A. No.

Mr. McCoy: Has counsel a copy of the subpoena?

(Document produced by counsel.)

Q. In this subpoena dated December 9, 1952, you were requested to bring with you all correspondence, affidavits, assignments, records and other

Defendant's Exhibit "AM"—(Continued)

(Deposition of John T. Havekost.)

data in any way relating to dealings between you and David Silberman and Talon, Inc., or its representatives, or the attorneys for either David Silberman or Talon, Inc. with respect to machines and methods for manufacturing slide fasteners.

Did you make an earnest search to produce the character of documentary evidence referred to in this subpoena?

A. I did. I think I did bring them along with me. I'm not sure. But I looked high and low for them, and I even looked this second time when Mr. Graham called me to see what I could find. Somehow or other, I either misplaced them or threw them out, I don't know.

Q. But you did have with you all the documents of every character that you could find?

A. Right; at that time I believe I did.

Q. In your testimony, you referred to other drawings that you might locate. Have you tried prior to this examination to locate such drawings as you could pertaining to this machine we are talking about? [33]

A. Yes. I still am looking for it. We are in a little bit of chaos at home. I had a son move in with me with a lot of furniture, and all that, and it's pretty hard to find anything at the present time.

Q. Have you heretofore shown any such drawings to Mr. Graham or to others connected with the litigation?

A. I have showed drawings similar to what I am

Defendant's Exhibit "AM"—(Continued)

(Deposition of John T. Havekost.)

speaking of to Mr. Lange at the time when this question came up of writing these agreements.

Q. That was prior to the present—

A. Yes, that was prior.

Q. Your dealings with Mr. Lange had to do primarily with foreign patents, did they not?

A. It did, right.

Q. It had nothing to do with the United States patent, isn't that correct?

A. That's as far as I understand it; that's what it was supposed to be.

Q. Your attention has been called to material written along the side of the document marked Defendant's Exhibit 2, and reading: "A construction incorporating the idea of closing jaws being operated directly by the ram, was invented and developed by me during 1943."

What was the nature of the matter there referred to?

A. Well, I believe at that time I had read the patent of [34] Mr. Silberman, and I wanted it to be shown that the patent didn't differ in no way as far as I could see from what I did with my machine.

Q. You mean that your machine was identically the same as the Silberman patent?

A. That's what I was having inference to, yes.

Q. During your other testimony, you identified many drawings in connection with the patent with which you had no corresponding parts in your own

Defendant's Exhibit "AM"—(Continued)

(Deposition of John T. Havekost.)

machine, did you not? A. I might have, yes.

Q. So there are many differences between your machine and the Silberman machine?

A. I would say so.

Q. And the only similarities that you have talked about are in the application of the so-called internal combustion engine piston and crank arrangement in your machine that you also noticed in the Silberman machine, isn't that correct?

A. Right.

Q. Now, in 1943, where were you working?

A. In 1943, I believe I was working for Slide Lock Corporation.

Q. But you had long since left the employment of Mr. Silberman, hadn't you?

A. Yes, sir. Well, I could say I left the employment of Mr. Silberman for about a year previous to that. [35]

Q. Have you made any effort to locate anyone of these six Zenith machines that were made?

A. Oh, I know where they are. At least up to two years ago, anyway.

Q. You knew where they were when the testimony was given previously by you in this proceeding? A. Yes, sir.

Q. Those machines used the principles of the Conmar process of first rolling the strip wire to form the projections and pockets in the element prior to the entry of the metal into the machine?

A. Only five of them did it that way. The other,

Defendant's Exhibit "AM"—(Continued)
(Deposition of John T. Havekost.)

the sixth one, the metal was fed directly into the machine.

Q. But that has been a modification of the machine since you—— A. No, I designed it.

Q. You designed that? A. Yes.

Q. But it was previously formed metal that was fed into the machine, the sixth machine?

A. Correct.

Q. So that the only function of any of these six machines was to cut off, to shear off the zipper element and attach it to the tape? A. Yes.

Q. In the industry, that was pretty much known as the [36] Conmar type machine, was it not?

A. Correct.

Q. Do you know of any threatened litigation or litigation between Mr. Silberman and Slide Lock during your connection with Slide Lock Corporation? That was Mr. Max Lange's company?

A. Max Lange's company previously. Yes, well, when I worked with them, Mr. Lange had nothing to do with this type of machine. Mr. Lange wanted me to design a machine for him, and in as much as the design, they wanted it similar to Mr. Silberman's, I refused to do it for them, in fact, figuring that Mr. Silberman and I had the first call on those machines. But I did design a machine for him which he didn't build.

Q. Did you ever file applications for letters patent of your own, either in the United States or in foreign countries?

Defendant's Exhibit "AM"—(Continued)

(Deposition of John T. Havekost.)

A. No, sir, because I figured that anybody that hired me, it was their prerogative to do it.

Q. After you left the Zenith Development Corporation, did you communicate to Silberman any new ideas that you might have on zipper-making machines? A. No, sir.

Q. (By Mr. Meech): Mr. Havekost, what were the events leading up to the signing of this Defendant's Exhibit 2?

A. That's that contract with Lange; is that Exhibit 2?

Q. That's right. [37]

A. Well, previous to when I signed this, Mr. Lange got in touch with me and asked me to visit him at his place of business. I went there, and he was the one who called my attention to the patent issued to Mr. Silberman. And he propositioned me to the effect that when I first went with him, I told him of my design with Silberman and I wouldn't go to work and give him a similar design. And then he showed me this patent, and I said a lot of that stuff is similar to what I originally designed for Silberman. Then I pointed it out to him according to this affidavit.

Q. Wasn't it true that he was building machines at that time for David Silberman?

A. That I don't know. I couldn't swear to it.

Q. You have no recollection of any controversy between Lange and Silberman?

Defendant's Exhibit "AM"—(Continued)
(Deposition of John T. Havekost.)

A. No, I have no—at least I didn't hear of anything at that time.

Mr. McCoy: That's all.

Redirect Examination

Q. (By Mr. Graham): Mr. Havekost, you answered one of Mr. McCoy's questions, and said at the time you last testified in this proceeding, you knew where the Zenith machines built from the drawings made by you were located. Will you state where those machines were located at that time?

A. Five of them were located at the Hared Fastener Company [38] in Philadelphia, and the other one was located at the Mayer Import Company at Montreal.

Q. Did you know for a fact that those machines were still there at the time you last testified?

A. Well, I knew definitely that they were at the Hared Fastener Company; that is, they were having machines still producing. I wasn't at the plant. But as far as the Mayer Import Company is concerned, I understand that Mr. Lasner, the owner of that company, had died, and there I wouldn't say that they were in operation.

Q. You then didn't know that these five original machines were at the Hared Fastener Company. You just believed they were?

A. Well, let me see. Two years ago I was down to Philadelphia, and I met Mr. Hared, and I asked him how the machines were coming along.

Mr. McCoy: Objected to as hearsay.

Defendant's Exhibit "AM"—(Continued)

(Deposition of John T. Havekost.)

A. And he said that his boy is in charge of the place now, his two sons, and that the machines were operating all right.

Q. You didn't see the machines? A. No.

Q. You didn't visit the plant?

A. I didn't visit the plant.

Q. And you haven't visited the plant of the Mayer Import Company? A. No. [39]

Q. You also testified that one of the machines constructed from your drawings worked upon preformed metal strips, metal strips in which zipper elements had been preformed, and that that machine cut off the preformed strip and attached it to the tape, is that correct?

A. Well, they all do that, all the machines do that from preformed metal. But as Mr. McCoy said, the Conmar type, they preform the metal and wind it up on rolls, and then unwind it into the machine. That's the Hared Fastener stuff. While the one in Montreal, the metal is preformed and fed directly into the machine.

Q. The one at the Hared Fastener Company did the work on preformed metal or on metal that didn't— A. On preformed metal.

Q. When the preformed metal was severed from the strip and attached to the tape, at the time that was done, was there any operation which also completed the formation of the element?

A. Well, if you call the forming of the legs when it was cut off, that's an operation. That's what com-

Defendant's Exhibit "AM"—(Continued)
(Deposition of John T. Havekost.)

pletes it. Otherwise, it can't be attached to the tape.

Q. So that there was some operation formed upon the preformed element in order to complete the formation of it? A. Correct.

Mr. Graham: That's all.

(It was stipulated and agreed by counsel for the respective parties that the signing of the foregoing deposition be waived.) [40]

[Endorsed]: Filed January 17, 1955.

DEFENDANT'S EXHIBIT "AN"

[Title of District Court and Cause.]

DEPOSITION OF WILLIAM WRAY

12 East 41st Street, New York, New York, February 25, 1955, 10:00 o'clock a.m.

Deposition before trial of William Wray, taken by Defendant, pursuant to Notice annexed hereto.

Appearances: Messrs. Lyon & Lyon, Esq., Attorneys for Plaintiff, 811 West 7th Street, Los Angeles, California, by Henry L. Burkitt, Esq., of Counsel and Ralph E. Meech, Esq., of Counsel. William J. Graham, Esq., Attorney for Defendant, 12 East 41st Street, New York, New York. [1]*

It Is Hereby Stipulated and Agreed by and between the attorneys for the respective parties that the signing of the deposition be waived.

Mr. Burkitt: Mr. Graham, I think in opening

* Page numbers appearing at top of page of Original Deposition.

Defendant's Exhibit "AN"—(Continued)

(Deposition of William Wray.)

I would like to make some statement regarding yesterday; the notice of taking these depositions, service was made February 4, 1955, is that correct?

Mr. Graham: That copy the reporter has will show the date service was made, February 5th. The notation I had here is February 4th, it wouldn't make very much difference one way or the other.

Mr. Burkitt: And I appeared here yesterday at the time appointed, February 24th, for the taking of the deposition of David Silberman, and was informed that the notice of taking depositions with the proof of service has not been received by you until February 23rd, isn't that correct?

Mr. Graham: That is correct.

Mr. Burkitt: And that no subpoena had been issued for David Silberman and that the deposition would not be taken, isn't that correct?

Mr. Graham: That is correct. I think I also stated to you that we would ask for permission of the Court to take the deposition of David Silberman after the trial of this action. [2]

Mr. Burkitt: Such an application is going to be made?

Mr. Graham: Such an application will be made and permission will be asked to file the deposition as part of the record and as part of the evidence in the trial.

Mr. Burkitt: That will be a matter for disposition at the time of trial?

Mr. Graham: That's right.

Defendant's Exhibit "AN"—(Continued)

WILLIAM WRAY

a witness, named in the annexed notice, being of lawful age, and being first duly sworn by a notary public of the State of New York in the above cause, testified on his oath as follows:

Direct Examination

Q. (By Mr. Graham): Please state your full name and address.

A. William Wray, 134 West 32nd Street, New York City.

Q. Mr. Wray, at one time were you interested in a corporation known as the Klosurette Corporation of America? A. I was.

Q. Do you recall when that corporation was organized? A. Oh, 1947.

Q. And do you recall what the paid in capital was of the corporation?

A. Actually paid in was two thousand dollars.

Q. Are you an officer of the corporation? [3]

A. I was.

Q. What office did you hold?

A. Treasurer.

Q. Where did that corporation have its place of business?

A. 239 West 17th Street.

Q. New York City? A. New York City.

Q. And what sort of quarters were occupied there by the corporation?

A. We had part of a loft, sub-leased from the people who had the whole loft.

Defendant's Exhibit "AN"—(Continued)

(Deposition of William Wray.)

Q. And what was the nature of the business carried on by that corporation?

A. We assembled zippers, mostly separators; separators is that certain style of zipper.

Q. When you say you assembled zippers, did you make any of the parts for the zippers, did you do any manufacturing?

A. The box that goes into a separator we made, that is what is called the component part.

Q. Did you have anything to do with the manufacturing of zipper chains? A. No.

Q. Did the corporation have any machinery for manufacturing zipper chain? A. No. [4]

Q. In order to carry on your business, you bought the parts that go into the making of zippers? A. No, we bought the chain.

Q. You bought the chain and then you assembled the chain?

A. We cut it to size and then made zippers from it.

Q. Now how many regular employees did the corporation have?

A. I believe it was three.

Q. Does that include yourself, or three in addition to yourself?

A. No, employees. We didn't consider ourselves employees. Let me elaborate on that statement, when I say three, as you have more work, you bring in people to help you and you pay them by the hour.

Defendant's Exhibit "AN"—(Continued)
(Deposition of William Wray.)

Q. But the regular employees were three in number? A. Three.

Q. Now were the assembled zippers sold by the corporation? A. They were.

Q. And in what market?

A. In the New York market.

Q. Do you recall the names of any of your suppliers, the people who supplied you with zipper chains?

A. Adams Industries, Apex, Stag Tool and Die, oh, several others I wouldn't know, but I will say that 75 per cent of the chain we used we bought from Adams Industries.

Q. Where are Adams Industries located? [5]

A. In Long Island City, the exact address I haven't got. I could look in the telephone book, they are in the telephone book.

Q. Now in carrying on the business of the Klosurette Corporation, did you have any contacts at any time with Talon, Inc., or any representative of Talon?

A. In 1948 I had an appointment at Jo Lane's place, which was at that time on 63rd Street, in New York City. I had an appointment at 3:00 o'clock that afternoon and when I came to Jo Lane I was with Mr. Swartz about two or three minutes and Mr. Meech was ushered into what they called at that time the board room. I was introduced to Mr. Meech.

Defendant's Exhibit "AN"—(Continued)

(Deposition of William Wray.)

Q. May I ask you to identify Jo Lane, what was the name of that?

A. Jo Lane Manufacturing Company.

Q. What business were they engaged in?

A. They were in the zipper business.

Q. Manufacturers of zipper chain?

A. I didn't know what they did; whether they made their own chain or bought their own chain, but I came there because Mr. Swartz at that time was not making separators and had given me a proposition that they wanted to consolidate with us or work out some arrangement where we would make separators jointly and that was why I came there.

Q. When you went to see Mr. Swartz, did you expect to [6] meet Mr. Meech?

A. I hadn't known Mr. Meech, I never had met Mr. Meech before.

Q. The Mr. Meech we are talking about is Ralph E. Meech?

A. I don't know him by the name of Ralph E. Meech, I know him by the name of Gus Meech.

Q. Did you and Mr. Meech have any conversation at the meeting?

A. Yes, Mr. Meech, after a few minutes, told me he was one of the men from Talon and that I was infringing on their product and I thought it was a huge joke, I laughed it off. I didn't know what he meant by infringing on them, and I said no, I couldn't infringe and he insisted I was infringing.

Defendant's Exhibit "AN"—(Continued)
(Deposition of William Wray.)

Q. Did you say you couldn't infringe?

A. I didn't, because I never had any machines there. It was known on the market that I didn't operate, I didn't make chain, because I was——

Mr. Burkitt: I want to object to these statements by Mr. Wray, which are the cogitations of his mind at that time and were not in the conversations between him and Mr. Meech and I will move to strike out the portion of the statement that has to do with anything except that he did not state to Mr. Meech his reasons.

Mr. Graham: Objection noted.

Q. Did you say to Mr. Meech that you did not have any machines? [7]

A. I don't remember whether I did or not.

Q. But you did tell him you were not infringing? A. Oh, definitely.

Q. Did you ask him what his basis was for charging you with infringement?

A. Yes, I recall that Mr. Meech had said, well, I am cutting some path in the market there. He had heard, Mr. Meech had heard that I am doing a very big job. I believe that was it.

Q. He said that to you?

A. Yes, that was the substance.

Q. In substance?

A. In substance, I don't know exactly how it came about, we were all discussing it, the three of us.

Defendant's Exhibit "AN"—(Continued)

(Deposition of William Wray.)

Q. Did he say anything about you manufacturing zipper chain?

A. Well, I believe he said I was infringing.

Q. Did he say he knew you were manufacturing zipper chains?

A. I don't know, I don't remember whether he did or not.

Q. But he did say you were cutting in on Talon's market?

A. Yes, the three of us were discussing that topic, John Swartz, whom I had known for quite a while, Mr. Meech and I, Mr. Meech, whom I had met for the first time.

Q. What position did Mr. Swartz hold with [8] Jo Lane Manufacturing Company?

A. I still don't know.

Q. He was an officer?

A. I don't even know whether he was an officer.

Q. He was one of the principals?

A. He appeared to me the main man in Jo Lane.

Q. Did you have any other conversation with Mr. Meech? A. That very day.

Q. That very day, did he say anything to you about Talon planning to bring suit against you?

A. Oh yes, yes, sure.

Q. Tell us what he said then in that connection. A. Mr. Swartz said to me—

Mr. Burkitt: Nothing about what Mr. Swartz said, please. Tell us what Mr. Meech said to you.

Defendant's Exhibit "AN"—(Continued)
(Deposition of William Wray.)

Mr. Meech: This was a meeting at which Mr. Swartz was present.

Mr. Burkitt: We don't want his statements here.

Mr. Graham: I think the question should be answered. You can note your objection.

Mr. Burkitt: I object.

Q. Will you state what Mr. Swartz said to you?

A. Mr. Swartz said to me, Talon company is going to sue me for infringement, that he, being very friendly toward me, and with the Talon people, he can help me. That was Mr. Swartz' [9] statement to me. Mr. Meech said nothing.

Q. What did you say when Mr. Swartz made that statement?

A. I laughed, I thought it was foolish.

Q. Did Mr. Meech say anything with respect to a suit?

A. Mr. Meech simply said I was infringing and they would have to take measures to protect themselves.

Q. When Mr. Swartz said that Talon was going to sue you, did Mr. Meech say anything at that time, did he deny they were going to sue you?

A. No, he didn't say a word.

Q. Did anybody make any statement that the suit would be very expensive? A. Oh, yes.

Q. Who made that statement?

A. Oh, yes, that was in the course of the conversation. We all, the three of us discussed that a patent suit is a very costly matter.

Defendant's Exhibit "AN"—(Continued)

(Deposition of William Wray.)

Q. Did Mr. Meech take part in that conversation?

A. I don't know, Mr. Meech says very little. He was present. He would either nod his head or, he doesn't do much talking.

Mr. Burkitt: I move to strike out all of his testimony having to do with Mr. Swartz' conversation with Mr. Wray.

Q. Now, did you hear anything further from Talon after [10] that meeting at Mr. Swartz' office?

A. Yes, about a month or two later I was, I received a registered letter.

Q. From Talon? A. From Talon.

Q. What were the contents of that letter?

A. Telling me I was infringing on a number of patents that they owned. I think there were either four or five patents that I was infringing upon which they owned.

Q. Did you respond to that letter?

A. I had seen Mr. Meech after that, since I then knew him.

Mr. Burkitt: I object to any statements unless the witness is going to answer the question.

The Witness: I can lead up to the question. I will answer that question.

Mr. Graham: Mr. Burkitt can note any objection he wants to. You go ahead and make your answer.

The Witness: I had known Mr. Meech, I had,

Defendant's Exhibit "AN"—(Continued)
(Deposition of William Wray.)

after receiving the letter, now that I had known him, I called the office but Mr. Meech was not in town that week and when he subsequently did come to town I spoke to him and I told him exactly the same thing, I says, "I am not running machines. You can come up to the place any time you want to." Well, he took an arbitrary position that I [11] was violating patents and that is all there was to it.

Q. Did he say that they were going to follow through, Talon was going to follow through and bring suit? A. Yes.

Q. Did they bring suit?

A. The very same year they brought suit, several months thereafter, I believe on the 31st of December of the very same year.

Q. 1948?

A. Right, the suit was commenced.

Q. Were you served with a summons at the time? A. I was served with a summons.

Q. Do you remember the court in which the suit was brought?

A. Southern District of New York.

Q. United States District Court for the Southern District of New York? A. That's right.

Q. Now after the suit was brought, was there any reference made to the suit in any of the trade papers?

A. Oh, yes, there was a big, full page, full column in the Women's Wear and Trade Record.

Q. That was probably in early 1949?

Defendant's Exhibit "AN"—(Continued)

(Deposition of William Wray.)

A. Yes.

Q. After the suit was brought did you have any difficulties [12] with any of your customers?

A. Oh sure. Some of them wouldn't continue.

Q. Will you state the nature of your difficulty?

A. Some of them read the article—

Mr. Burkitt: I object to that, he doesn't know whether they read the article.

Mr. Graham: You don't have to state whether they read the article.

The Witness: I have been told.

Mr. Burkitt: I object to testimony as to what somebody told him.

Q. Did any of your customers say they had read the article? A. They did.

Mr. Burkitt: I object also to that.

Q. What else did your customers say to you?

A. They can't take a chance doing business with me, they might also become involved with Talon.

Q. Did that have any effect upon your business?

A. Oh, sure.

Q. What effect did it have?

A. Some of the orders I had I gave back. The people who bought, I had them walk out on me. I had to go out and look for different business. It was just at the time I was building my business big. [13]

Q. Did you enter any defense to the suit?

A. Oh, sure. Sure, I defended the action and entered a counter claim.

Defendant's Exhibit "AN"—(Continued)

(Deposition of William Wray.)

Q. Did you engage a lawyer for that purpose?

A. I did.

Q. What was the name of that lawyer?

A. Frederick E. M. Ballen.

Q. You say you put in a counter claim. What was the basis for your counter claim?

A. That I wasn't infringing, that the suit was started against me to embarrass and harass me and, well, I imagine a lot of legal phraseology goes with it. I haven't got the papers before me.

Q. Did that suit eventually come to trial?

A. No, that suit was never tried.

Q. Did you have any conference with anybody representing Talon when the case was reached for trial?

A. I was examined before that by the attorneys for Talon on several occasions, I believe, and then there was another examination where the Talon people were examined by my attorney and that is all there was to it at that particular time.

Q. When was the case reached on the calendar for trial, do you recall that?

A. It was reached once in June, I believe, in 1951, and it was postponed to, I believe, September or October, because [14] the summer months came about.

Q. Do you recall who requested that postponement? A. We did.

Q. Your request was granted? A. Oh yes.

Q. Before the case came up again in October

Defendant's Exhibit "AN"—(Continued)

(Deposition of William Wray.)

or in the fall of 1951, were there any negotiations between Klosurette Corporation and Talon with respect to a settlement of the case?

A. I had seen Mr. Meech on several occasions and we discussed the matter. I says, "You know,"—oh, incidentally, they came to my place and saw I wasn't operating any machines, according to the facts that I gave them, that I bought the chain. I also gave them the information which was substantiated by invoices, whom I bought the chain from.

Q. Do you recall when that visit was to your place of business?

A. It was more than one visit. Several visits.

Q. Was that by your invitation or at the request of Talon?

A. Well, I invited Mr. Meech to my place once myself. Many a time I'd get a telephone call from Talon's attorneys. I said it's perfectly all right for you to come up here, any papers you want, any information you want, here it is.

Q. Now in any meeting that you had with Mr. Meech, did you discuss the possibility of settling the case? A. Oh sure. [15]

Q. Was the case ultimately settled?

A. Yes.

Q. Do you recall what the terms of the settlement were?

A. I received two thousand dollars to pay the legal expenses and releases, I imagine, were ex-

Defendant's Exhibit "AN"—(Continued)
(Deposition of William Wray.)

changed by the lawyers and that was the end of the case.

Q. Klosurette Corporation didn't consent to any decree?

A. No, there was no decree, no infringement.

Q. And Klosurette Corporation made no agreement with Talon to pay royalties, did they?

A. No, we didn't run the machine, that was the end of the case.

Q. Talon paid you two thousand dollars?

A. That's right.

Q. To defray legal expenses?

A. That's right.

Q. Is Klosurette Corporation of America still in business? A. No.

Q. Do you recall when it ceased doing business?

A. I imagine that year.

Q. 1951?

A. I don't remember whether it, whether the case was settled in 1950 or 1951, no, wait, it was 1951. After that I didn't want to be involved any further in any matters that I'd be at the mercy of anybody to come in and file suit with such [16] big expenses, so I just stepped out, that is all, discontinued. I paid everything and everybody and that was the end of it.

Mr. Graham: That is all I have.

Cross Examination

Q. (By Mr. Burkitt): Mr. Wray, when was the

Defendant's Exhibit "AN"—(Continued)

(Deposition of William Wray.)

first time you showed one of these machines to a representative of Talon?

A. I didn't show him any machine, I had no machines to show.

Q. Wasn't there any machine at all in your premises at any time for making chain?

A. That Klosurette owned?

Q. I am talking about being on your premises.

A. There was a couple of machines that were owned by Wek Sales Company that were not in working condition, in other words, they were scrap. Wek owned a mortgage on a firm called Wing Slide Fastener Company that went broke.

Q. As a matter of fact these machines were on your premises from the time that Wek Sales—

A. They were not completed machines.

Q. But they were machines.

Q. They were not operating machines.

Q. But they were on your premises, is that correct?

A. I had part of a loft, somebody else's.

Q. Who was that somebody else? [17]

A. Victory Mask Company. And you could go in and out any way you wanted, but however there was a lot of junk in the place and none of it was workable.

Q. Before you took over those premises, Wing, that you mentioned, was the lessee, isn't that so?

A. Yes.

Defendant's Exhibit "AN"—(Continued)
(Deposition of William Wray.)

Q. And they had those machines on the premises at the time they were there, correct?

A. They didn't have it, when I took over Wek had it.

Q. Wek succeeded Wing?

A. Wek foreclosed on Wing.

Q. They took over the premises from Wing?

A. I took the premises, then Wek asked me will I permit them to store this whatever they want there until they have a sale and I did and they had their sale and they sold all the equipment, there were a lot of machines there.

Q. And there were chain machines involved?

A. That I don't know because I am not familiar with the making of chain or chain machines.

Q. All right then, we'll say there were zipper making machines included in that batch of Wing machinery, is that correct?

A. No, I bought my stringer from the outside market.

Q. I am not asking about your stringer. In this batch of machinery which was put in there by Wing or by Wek, there was [18] slide fastener or zipper machinery, isn't that so?

A. I don't know. I don't know what you would call zipper machinery. A zipper machine is a machine that will function.

Q. Only a machine that functions is a zipper machine, correct?

Defendant's Exhibit "AN"—(Continued)

(Deposition of William Wray.)

A. Anything that will work, that you can harness to work. I don't have to argue with you.

Q. There was some machinery from Wek or Wing?

A. There was a lot of machinery.

Q. At the time you took over the premises?

A. Yes, there was a complete machine shop there composed of maybe 10 or 15 types of machines, lathes, grinders.

Q. All of which didn't belong to you?

A. Exactly, it was not my property.

Q. When did you first tell this to a representative of Talon?

A. When the representative of Talon came to me they had sold most of this.

Q. Who were they?

A. Wek had sold most of their equipment, they were selling it piecemeal.

Q. But there still remained on your floor some machinery, right, at the time the representative of Talon came to you, correct?

A. That is possible, yes. [19]

Q. Which representative are you mentioning as a representative of Talon; Mr. Meech?

A. Another gentleman, I forget his name, the record will show who came, who originally came to my premises. I invited him.

Q. After the examination, wasn't that so?

A. I believe that was before the examination.

Defendant's Exhibit "AN"—(Continued)
(Deposition of William Wray.)

Q. There was somebody up to see you before the examination, to see the machines?

A. Yes, to look at the place.

Q. You don't remember who he was?

A. He worked for the firm of Burgess, Hicks and Ryan. He was an elderly gent, a gray haired fellow. I forget his name. The record will show.

Q. After the suit commenced? A. Yes.

Q. In other words no representative of Talon came to see you before the suit commenced?

A. Mr. Meech had come to my office at my invitation one day before the suit commenced. We had lunch together.

Q. Did you show him the machinery on the floor at that time?

A. I told Mr. Meech to go any place he wanted.

Q. Did you tell him the story about Wing and Wek at that time? [20]

A. Mr. Meech knew about it.

Q. Was there any succession at all between Wing and Wek and Klosurette?

A. None whatsoever, outside of the fact that I bought from Wek the lights, and some assembly equipment for the sum of, the whole thing ran to about fifteen hundred dollars, everything that I bought.

Q. Now about this box making equipment you were talking about, did you buy that from Wing or Wek?

Defendant's Exhibit "AN"—(Continued)

(Deposition of William Wray.)

A. I bought nothing from Wing. The box making equipment I made.

Q. You didn't get any box making equipment from Wek then?

A. No. That is on record in the Court, the conditions of the bill of sale, from Wek to me.

Q. Mr. Wray, I think you gave some figures to the attorneys for Talon as to your sales in the years 1948, 1949 and 1950. Now as I understood it, the beginning of the suit was at the very end of 1948, December, 1948? A. Yes.

Q. Now the figures that you gave, and I read them to you, totaled for 1948, \$49,421.38 and for the year 1949, \$59,439.39. Do you dispute those figures?

A. I didn't give them those figures; they looked at the books, they examined the books, my books, and they took those figures. [21]

Q. Your accountant was present at the time these figures were taken?

A. No, he was not present.

Q. Your accountant was not present?

A. My accountant was not present.

Q. What was your accountant's name?

A. I don't even know the name of the man, I don't think I had an accountant at that time, if I can remember right.

Q. Isn't it true that you were putting off the examination of your books as to the amounts of sales until your accountant had returned from California?

Defendant's Exhibit "AN"—(Continued)
(Deposition of William Wray.)

A. I had a friend of mine by the name of Louis Rothenberg who was a fellow, he was not a certified man, he was a good bookkeeper, he had worked for Wing at one time as a bookkeeper or something. When this matter came up I tried to get hold of him. I was told he was in California and subsequently when he came back I then called the office of Burgess, Hicks and Ryan and told them to come up to my place so they can work together with my man. That is how the accountant came into the picture.

Q. Your accountant was there at the time these figures were taken? A. I imagine so.

Q. Didn't you get copies of those figures?

A. I knew the figures, I didn't have to get copies. I was a two by four outfit. [22]

Q. Did you ever dispute those figures?

A. Never. I wasn't a big outfit that didn't know what was going on. I want you to understand, in 1949 my business should have been double the amount of 59 thousand, but because of this suit I lost that business. I explained it to Mr. Meech and I explained it to Mr. Gudges and I even explained it to Mr. McCoy.

Q. But the figures were still as I gave them to you?

A. If you say so, they are in the record, that is what it is.

Q. These figures, Mr. Wray, are part of the

Defendant's Exhibit "AN"—(Continued)

(Deposition of William Wray.)

report made to the attorneys for Talon, showing the month by month—

A. I don't dispute any figures you have there, I don't dispute it at all. You can accept them.

Q. All right. Actually, Klosurette did, well, I would say, advance some money to a Mr. Wasserman, as what you called a loan against certain machines which were on your premises, isn't that so?

A. No sir.

Q. Well, what was the story about the money advanced to Mr. Wasserman?

A. Mr. Wasserman never was advanced any money. Mr. Wasserman was working for Klosurette.

Q. And there was some machines there, were they not given as security to Klosurette for money given to Mr. Wasserman? [23]

A. No, there is in your papers here, you have some information on a matter that took place before Klosurette went into business and they had, it wasn't Wasserman, it was Wing, I believe, if my memory serves me right, some sort of an export deal and they sold to some fellow by the name of Skitoni, some machinery and they assigned that sale, they assigned this invoice to Klosurette for some monies for some transaction there or for some interest that might have been there, I don't remember what the facts were, it's so far back, but the record will show it all there very clearly. If you

Defendant's Exhibit "AN"—(Continued)
(Deposition of William Wray.)

want to refresh my memory I will be able to go ahead with you on it.

Q. These machines you mentioned, weren't they on your premises at the time of this examination that took place back in November 30, 1949?

A. If they were, they were not completed machines is all I can tell you.

Q. Weren't they the machines also against which you had made this loan?

A. That deal never materialized.

Q. I am asking you as to the loan.

A. It might be if you refresh my memory there I will be able to go along with you.

Q. I will read from page 14 of the deposition in which the question was, "Getting back now to the Skitoni machines, you still have a loan against these machines, do you?", your answer [24] was, "I do." Question, "What is the nature of the protection that you carry on that loan?", answer, "As soon as Skitoni takes those machines I am to be repaid." Question, "Have you any interest in the machines as a result of that loan?", answer, "No sir." Were those machines at that time in your possession?

A. I don't know whether they were or not.

Q. You were telling us a little while ago it was an assignment of the invoice to your company.

A. That's right.

Q. And as a part of the invoice, weren't the machines also retained by you?

Defendant's Exhibit "AN"—(Continued)

(Deposition of William Wray.)

A. The machines were never delivered.

Q. To you? A. To Skitoni.

Q. They were kept by you, were they not?

A. No, they were never made.

Q. Weren't they on your premises at any time?

A. I don't think so, if they were they were not completed machines. That is the reason that deal was never consummated. You have a copy of the invoice.

Q. I will read you a question, just a minute, on page 17 of your deposition, you were asked, regarding the Skitoni machines, the question was, "Were these machines ever on the premises of Klosurette Corporation?", your answer, "Yes."

A. Does it say anything about whether those machines were completed or not? [25]

Q. You had stated in here, the machines didn't have motors, was that what you considered to be incomplete machines?

A. They not only didn't have motors, they didn't have a lot of other things.

Q. Were the machines in your possession at that time?

A. I don't know, I imagine they would be.

Q. These machines were standing around on the floor there, isn't that so, at the time the suit was commenced, on the floor of Klosurette?

A. There were some unfinished machines in my premises. They never worked, they were never oper-

Defendant's Exhibit "AN"—(Continued)
(Deposition of William Wray.)

ating. I never owned them. Some money was advanced on this invoice, on the shipping invoice.

Q. Do you have any connection at all with Union Slide Fastener, Inc., the defendant in this action?

A. I have not. I don't even know Mr. Lipson, I never met him.

Q. Mr. Wray, you mentioned an article in the trade journal, which trade journal was that?

A. Women's Wear and Trade Record.

Q. Did you have a whole bunch of copies made of that article?

A. I am referring to the article that appeared in the paper when Talon commenced the suit against us. [26]

Q. What article did you have copies made of?

A. To counter and offset the damage done by Talon to me, I then went back to the same papers and I said to them, when my answer goes in you must give me the same space.

Q. Did they?

A. Not exactly the same space, but they printed the article.

Q. They did print the article?

A. They did.

Q. And you distributed it?

A. I had a lot of it, I blew it up this big and I went to everyone of my customers and I gave everyone of my customers one. Whoever came into the place got one.

Defendant's Exhibit "AN"—(Continued)

(Deposition of William Wray.)

Q. You were telling the world about the suit against you, weren't you?

A. I had no alternative. I was in a bad spot.

Q. Weren't you telling the world about the suit against you?

A. I didn't tell the world but I told the customers in New York, but I had to fight with those newspapers to get the article in. They didn't want to take it, they refused and I said I am going to fight you, you put Talon's in and I want mine put in.

Q. They did put your article in?

A. They did.

Q. You reproduced it and spread it around to all of your customers? [27] A. I did.

Q. You said there were several occasions on which you were examined. There was only one occasion, isn't that correct?

A. I don't remember, I think I was down to Burgess, Hicks and Ryan on several occasions.

Q. The only date that I have here, Mr. Wray, is November 30, 1949. Do you know of any other date?

A. I don't know what the dates are, I know I was in that office on several occasions. That is all I can tell you.

Mr. Meech: Mr. Wray, did you ever have any connection with Wing Slide Fastener Company?

The Witness: I didn't know Wing.

Mr. Meech: To the best of your knowledge, did Wing ever manufacture fasteners, stringers?

Defendant's Exhibit "AN"—(Continued)
(Deposition of William Wray.)

The Witness: To the best of my knowledge I don't think that Wing manufactured anything at any time because Wing went broke after having the finance company and creditors in there for over a hundred thousand dollars.

Q. Did you know about their activities?

A. I didn't know them.

Q. You are just speaking from somebody's statement to you that they went broke for a hundred thousand dollars? A. Somebody else.

Q. Somebody else told you? [28]

A. The bank told me, prior to that I didn't know.

Q. You didn't even know they were in business?

A. I didn't even know they were in business.

Mr. Graham: Mr. Burkitt, you had copies of the record in the Klosurette suit, I wonder if we can stipulate as to the patent in the Klosurette suit, Talon against Klosurette.

Mr. Burkitt: I think you can, I don't have the whole record, particularly Mr. Wray's examination.

Mr. Graham: If you recall, Mr. Wray, you don't have a copy of the complaint?

The Witness: There were four or five of them. I don't know, there were a lot of big numbers in there.

Mr. Graham: Do you recall whether Smith patent was one of them?

The Witness: I imagine.

Mr. Burkitt: You don't know, do you?

Defendant's Exhibit "AN"—(Continued)

(Deposition of William Wray.)

The Witness: Offhand I don't know.

Mr. Graham: Do you remember the names of any patentees, do you remember Pooks?

The Witness: Pooks registers in my mind.

Mr. Graham: Was there more than one Pooks patent?

The Witness: I think so.

Mr. Graham: Was the number of Pooks patents maybe five or six?

The Witness: One name called for two patents.

Mr. Graham: Mr. Burkitt wants you to get certified copies of the record, so we will have more expense.

The Witness: Your office has it.

Mr. Burkitt: Mr. McCoy will stipulate that with you at any time.

Mr. Graham: That is all I have.

Mr. Burkitt: You are appearing here without subpoena, correct?

The Witness: Let me put it clear, when I was finally contacted I said this was——

Mr. Burkitt: Can't you answer my simple question?

The Witness: I don't want to answer, you know why I don't want to answer the way you want me to answer. I will be perfectly candid with you, I was told I was going to be subpoenaed. I didn't want to be annoyed, I didn't want to be bothered. I said tell me when you want me and I will be there.

Defendant's Exhibit "AN"—(Continued)
(Deposition of William Wray.)

Mr. Burkitt: You discussed this matter at length with Mr. Graham before?

The Witness: I had discussed no matter with anybody. I have no reason to want to discuss it. I don't want to discuss it. As a matter of fact I discussed it with Mr. Meech and I said to Mr. Meech on more than one occasion, "Let's get together and settle this blamed thing so both of the people will be satisfied and continue trying to make [30] a living," and Mr. Meech said—

Mr. Burkitt: All right.

The Witness: That is what I wanted you to know.

Mr. Graham: What did Mr. Meech say?

The Witness: Mr. Meech said, "I will present it to management. Management has been hurt in this matter a whole lot. Management feels sore. I will go back again and I will try to explain the situation to them." Up until last week I prevailed upon Mr. Meech to push through the settlement because the cost of a trial of this kind is very expensive.

Mr. Graham: For both parties.

The Witness: Definitely.

Mr. Meech: Was that approach being made in the interest of Union?

The Witness: No, in your interest as well.

Mr. Burkitt: When was the last time you saw Mr. Graham?

The Witness: Mr. Graham, yesterday.

Defendant's Exhibit "AN"—(Continued)

(Deposition of William Wray.)

Mr. Burkitt: At this office?

The Witness: At this office. He said to me, "Your examination is for tomorrow, not for today."

Mr. Burkitt: And that is all that happened?

The Witness: That is all that happened.

Mr. Burkitt: When did you see him before that?

The Witness: I spoke to him on the telephone.

Mr. Burkitt: When did you see him before that?

The Witness: Once before that.

Mr. Burkitt: How long back?

The Witness: Oh, several weeks ago, maybe longer.

Mr. Burkitt: Here in this office?

The Witness: Once for five minutes in this office.

Mr. Burkitt: Was the five minute call also a telephone call?

The Witness: It was in this office.

Mr. Burkitt: That was not the telephone call you said you had since your last meeting?

The Witness: I called him and he was not in the office. He was in court.

Mr. Burkitt: And that is the total of your conversations with Mr. Graham?

The Witness: Yes, that is the total.

(Whereupon at 11:05 o'clock a.m., the examination was closed.) [32]

[Endorsed]: Filed March 1, 1955.

DEFENDANT'S EXHIBIT "BR"

[Title of District Court and Cause.]

DEPOSITION OF ISADORE NAPP

Deposition suite, offices of Verlon L. Polk & Associates, 541 S. Spring Street, Suites 316-17, Los Angeles 13, California, Wednesday, July 20, 1955, 11:30 a.m.

Appearances: For the Plaintiff: None. For the Defendant: Allan D. Mockabee, Esq., Attorney at Law, 4063 Radford Avenue, Studio City, California, Poplar 6-1389. [1]*

Proceedings

Whereupon,

ISADORE NAPP

a witness called by and on behalf of the Defendant, after being first sworn by Vernon L. Polk, CSR, a notary public in and for the County of Los Angeles, State of California, was examined and testified as follows:

Direct Examination

Q. (By Mr. Mockabee): Mr. Napp, will you please state your full name and address?

A. Isadore O. Napp, 839 South Los Angeles Street.

Q. What is your home address?

A. 138 North Carmelina.

Q. Is that in Los Angeles? A. Yes.

Q. I believe you are familiar, Mr. Napp, with

* Page numbers appearing at top of page of Original Deposition.

Defendant's Exhibit "BR"—(Continued)

(Deposition of Isadore Napp.)

the fact that you are to be asked questions. Now that you have been sworn in, the notary will take down the answers, as well as my questions, and you will be given a copy of the deposition to check over and sign, before a notary, and it will become part of the record in *Talon, Inc. v. Union Slide Fastener, Inc.*, which is now pending in the Federal Court here in Los Angeles. From that, and having given a deposition before, I believe, do I understand you know exactly what the nature of this proceedings is?

A. I don't know exactly, but I have a fair idea.

Q. That it is a suit for infringement? [2]

A. On patents, I understand.

Q. Brought by *Talon, Inc.* against *Union Slide Fastener*? A. Yes.

Q. Are you aware that this litigation is being investigated by the Antitrust Division of the Department of Justice?

A. Mr. Lipson just showed me a letter, prior to the time I came in here, about that.

Q. A letter from the Department of Justice?

A. Right.

Q. Do you recall what it said?

A. I glanced it over and the contents of the letter, that they request some information from the attorney and the outcome of the court, in regard to the anti-Sherman law, I believe.

Q. Are you the sole proprietor of the *Roxy Thread Company*? A. Yes, sir.

Defendant's Exhibit "BR"—(Continued)
(Deposition of Isadore Napp.)

Q. Are you the general manager of its activities? A. No.

Q. Who is?

A. I have different people in different departments.

Q. But you supervise the whole operation?

A. Right.

Q. Isn't that true? What is the principal product of your company?

A. The manufacture of threads and zippers.

Q. How long have you engaged in the manufacture of zippers?

A. About 1940, I believe. [3]

Q. Had you been in any way associated with the zipper industry prior to that time? A. No.

Q. I believe in your deposition dated November 25, 1952, in which you gave testimony in this same case, you testified that you had been in the slide fastener business since 1934?

A. I said I had been in business in California since 1934.

Q. But you were not in the slide fastener business all that time? A. No.

Q. Were there any other slide fastener manufacturers in California at the time you started in the manufacture of zippers?

A. Not to my knowledge, unless the Talon assembly plant was called a manufacturing—

Q. They had an assembly plant here at that time?

Defendant's Exhibit "BR"—(Continued)

(Deposition of Isadore Napp.)

A. Either here or in San Francisco.

Q. Have you been engaged in the manufacture of zippers since you state that you started in 1940?

A. Right.

Q. When you speak of the manufacture of zippers, was your firm producing zipper stringers and assembling them into zippers, since 1940?

A. Right.

Q. Do you operate under a license agreement with the Prentice Corporation? [4] A. I do.

Q. Or the Prentice Manufacturing Company?

A. It is a license agreement with the Prentice Corporation, yes.

Q. How long have you operated under that license? A. Since 1940.

Q. Do you have a copy of that license with you?

A. That license agreement that I have is not with the Prentice Corporation, but it is with the Stronghold Fastener Company.

Q. Who is Stronghold?

A. The Stronghold is a company that I believe are out of business now, and they were the ones that had the license agreement with the Prentice Company, and I bought that company out and they had the consent of the Prentice people to transfer that agreement.

Q. Do you have that license with you?

A. I haven't got it with me, and I don't even know where I could find it.

Q. Did you search for it before you came up

Defendant's Exhibit "BR"—(Continued)
(Deposition of Isadore Napp.)

here? A. I sure did.

Q. In general, what did the license provide?

A. That we have the right to manufacture slide fasteners, under the license of the Prentice methods.

Q. Did it list any patents under which you were licensed? A. I don't recollect that.

Q. How did it identify the Prentice methods in the license. [5] in other words, so you would know what operation you were licensed to perform?

A. It's been so long, that I don't remember. It could be, and then I wouldn't remember, being so long ago, I do not recollect the exact patents, or if they had any patents.

Q. You see, in the grant of a license, you are paying something, usually in the form of royalties, for the right to make, sell, or use something. Do you recall what rights you acquired, in other words, under that license?

A. Acquired rights to use their machinery, use their methods.

Q. To use Prentice machinery, is that right?

A. That's right.

Q. Did you buy the machinery from Prentice?

A. No.

Q. You leased it? A. Yes.

Q. Do you still lease it from Prentice?

A. Yes.

Q. Do you know where those machines are made? A. Not the least idea.

Q. You get them from the Prentice Company,

Defendant's Exhibit "BR"—(Continued)

(Deposition of Isadore Napp.)

is that correct? A. That's right.

Q. Do you pay a flat monthly rate for their use, or do you pay for them in accordance with the production of the machines?

A. Both. We pay a rental for the machinery, and a royalty based on sales. [6]

Q. Do you recall the amount of rent and royalty? A. Pardon?

Q. Do you recall the amount of rental and the amount of royalty?

A. The exact rental I don't recall, but I know it is 2 per cent royalty on sales. I think the rent is \$500.00, for three months, but the exact figure, I couldn't—

Q. On each machine?

A. No, on the amount we have.

Q. How many machines do you have?

A. Nine.

Q. Do you have any license agreement from the Talon Corporation? A. No.

Q. Do you have any sort of an understanding, license written or verbal, with Talon? A. No.

Q. Has Talon or any representative of Talon ever discussed with you the manufacture and production of zipper stringers? A. No.

Q. Have you ever been promised by Talon or any of its representatives that your firm will not be bothered about patent infringement?

A. No.

Q. As a pioneer in the zipper industry in this

Defendant's Exhibit "BR"—(Continued)

(Deposition of Isadore Napp.)

area, you are [7] undoubtedly familiar with the zipper trade and the various processes involved in their production, are you not?

A. Well, I don't know. If you make it more specific, put your question so I would know what you are asking; you are asking a broad question.

Q. I say are you familiar with any of the production methods and machines?

A. No, I am not; just by hearsay, or glancing at some, at some machinery.

Q. Where have you seen other machines?

A. At the California Slide Fastener.

Q. Do you know what type of machines they have?

A. They were supposed to have been a product of Silberman's Machinery.

Q. What Silberman do you mean?

A. David Silberman.

Q. Is he a zipper machine manufacturer?

A. He is supposed to be one. I don't know whether he manufactures them or not.

Q. Have you ever seen a patent to David Silberman on a zipper machine?

A. The only patents, papers I have seen, are the ones that Mr. Lipson showed me up at my house, a few weeks ago.

Q. From your examination of that, could you determine what type of machine it was? [8]

A. I am not qualified to determine anything, because I am not a mechanical engineer.

Defendant's Exhibit "BR"—(Continued)

(Deposition of Isadore Napp.)

Q. I hand you a copy of Silberman Patent No. 2437793 issued March 16, 1948, and ask you if that is the same as the patent copy which was shown to you by Mr. Lipson?

A. I believe it is. I wouldn't swear to it. I believe it is.

Q. Are you familiar with the Conmar type of zipper machine? A. No, I am not.

Q. Have you seen any other machine beside the Silberman machine? A. That's about all.

Q. Are you familiar at all with the different shapes of zipper elements put out by other manufacturers?

A. I am familiar with the shapes of the different elements, but just by looking at the product, the finished product.

Q. How do they differ from yours?

A. Well, some have square edges, some have rounded edge.

Q. What type is yours?

A. The rounded edge.

Q. I hand you a photostat on which several drawings are represented, and across the center at the right-hand side there is a drawing marked "Legat #2,116,726 2 alternative strips," period. You will note the strip at the right, which shows a completed element before and after it is clamped on a tape. The dotted lines show the element [9] after it is clamped in place.

Will you, from the manner in which you have

Defendant's Exhibit "BR"—(Continued)

(Deposition of Isadore Napp.)

just described the different shapes of elements, identify the type shown in that photostat? Is it round or square?

A. If that drawing with a dotted line represents the finished unit, I would say that is a round element. But I am not a blueprint reader, so—I am not a blueprint reader, but the edge over here seems to be square.

Mr. Mockabee: Off the record.

(Discussion off the record.)

The Witness: I am not a blueprint reader. I don't know how to read blueprints, but if that dotted line represents the finished unit, then that would be a round-edge unit.

Mr. Mockabee: I offer the photostat identified by the witness, as Defendant's Exhibit A.

(Photostatic copy of drawing worded at lower right-hand corner "July 17, 1955, Drawn by P. Lipson" was marked Defendant's Exhibit A to the deposition and will be found bound at the end of this deposition.)

Q. (By Mr. Mockabee): Is the manufacturing method used by Crown Corporation to make Crown zippers similar to the Prentice method?

A. I wouldn't know.

Q. Have you ever heard how Crown zippers are made?

A. I heard that it is a die cast method. [10]

Q. As a man who was in business probably for sometime before you entered into the Prentice li-

Defendant's Exhibit "BR"—(Continued)
(Deposition of Isadore Napp.)

Q. Did you purchase the Prentice license from Stronghold, is it? A. Right.

Q. Did you make any investigation of other methods of production before purchasing that license? A. No.

Q. Did you know anything about the quality of other methods and machines at that time?

A. No.

Q. What prompted you to purchase the Prentice license?

A. It was Stronghold Fastener Company started cutting prices, on zippers, and at that time we were handling the Waldes Kover-Zip, and it was cheaper to buy him out than keep on fighting with him.

Q. Weren't you familiar with the Waldes zipper and its manufacture?

A. Waldes used the Prentice method.

Q. Referring to the photostat, Exhibit A, and that portion to which we referred and marked "Legat #2.116.726," does that drawing show anything at all similar to the Prentice method of manufacture?

A. That drawing wouldn't show anything.

Q. It shows a portion of a strip with recesses and projections, and it shows at the right hand of the strip, a formed zipper element, is that correct?

A. The complete element. [11]

Q. Is that made in any way like those manufactured under the Prentice method?

A. I wouldn't know that.

Defendant's Exhibit "BR"—(Continued)
(Deposition of Isadore Napp.)

Q. Does it look anything like the zippers you make?

A. Yes, the complete unit, and that's specifically on this particular end of the drawing here (pointing). I wish you would circle it and mark it, so that there will be no misunderstanding.

(Document marked by Mr. Mockabee.)

Q. (By Mr. Mockabee): As similar to the elements you manufacture?

A. Yes, the shape of the element I manufacture.

Q. I hand you a zipper and ask you if you can identify that.

A. What do you mean by "identification"?

Q. Do you know what type zipper it is?

A. No, I don't.

Q. Do you think it looks like a Talon zipper?

A. Talon makes more than one kind of a zipper.

Q. Do you think it looks like any of the Talon zippers? A. Not those I have seen.

Q. Do you think it looks like a Prentice zipper?

A. It looks more like a Prentice zipper, a Prentice element.

Q. Do the elements on that zipper have square heads or round heads?

A. I would call that a round-edge unit.

Q. I said round heads. Would round shoulder be a better term? [12]

A. Round edge I think would be the better term.

Q. Edge?

A. Yes, because the edge represents the outside

Defendant's Exhibit "BR"—(Continued)

(Deposition of Isadore Napp.)

of the unit, and that is what I am talking about.

Mr. Mockabee: I offer a zipper just examined by the witness as Defendant's Exhibit B.

(The zipper above referred to was marked Defendant's Exhibit B to the deposition and will be found bound at the end of this deposition.)

Q. (By Mr. Mockabee): Did you first lease machines from Prentice in 1940? A. Yes.

Q. Did those machines have mechanism for intermittently feeding a flat band or strip of material into the machine or die or towards the punches on the ram? A. Yes.

Q. Was the machine for producing these zippers called an eccentric press?

A. I call it a punch press; I don't know what anybody else would call it.

Q. Did it have an eccentric movement in it?

A. What is your definition of an eccentric movement?

Q. Did it have cams on the main shaft and connecting rods to operate the mechanism?

A. No. [13]

Q. What operated the ram?

A. The drive shaft on the flywheel.

Q. How was the ram connected to the drive-wheel?

A. I don't know. I know it was offset, to give that up-and-down motion.

Defendant's Exhibit "BR"—(Continued)
(Deposition of Isadore Napp.)

Q. And there was a member connected from the ram to the driveshaft, is that right?

A. I wouldn't know. Like I told you before, I am not a mechanical engineer, and I wouldn't know the workings of it.

Q. No, I am speaking just of the observation of the machinery in your shop.

A. It was just like a punch press going up and down.

Q. Were there elements on the main shaft that were offset from the center line?

A. The shaft, the shaft itself.

Q. Was a crankshaft, in other words?

A. That's right.

Q. And connected with the ram?

A. That's right.

Q. And the ram moved vertically?

A. That's right.

Q. And of course the press had a base?

A. It was all one unit.

Q. And the ram or the ram block was guided by gibs, or vertical guide posts? [14]

A. I wouldn't know. You are asking me questions I can't answer, Counsel, because I wouldn't know the workings of the mechanics of that machine.

Q. Did the ram move?

A. Just up and down.

Q. In a straight line?

A. In a straight line, that's all I know.

Defendant's Exhibit "BR"—(Continued)

(Deposition of Isadore Napp.)

Q. Did those first machines have rollers for feeding the metal strip to the machine?

A. I still wouldn't know.

Q. Did it have any rollers on it at all?

A. It had rollers, lots of rollers. I don't know what they were for.

Q. But there was something there that fed the strip in?

A. I couldn't answer that either.

Q. Well, you know that it makes the elements out of a strip of material?

A. I know that it is made out of the strip of material going onto the tape. How it happened, I don't know.

Q. Just a smooth flat strip feeds in there?

* * * * *

A. All I know, it cost me so much to manufacture, and I sold it at a certain price that showed me a profit, and that was why I was interested in buying that license from Silberman.

Q. Before you purchased this Prentice license from the Stronghold Company, did you examine the method, cost and speed of production and the potential profits you could expect? [15-16]

A. No, I didn't go into details of examining the methods, but I did go into details as to the cost of manufacturing, and I knew what the selling cost was.

Q. So you knew about what your profits might be?

A. That's right.

Defendant's Exhibit "BR"—(Continued)
(Deposition of Isadore Napp.)

Q. Were any changes made in your machines after the time you started in production?

A. On my machines?

Q. Yes. A. No, not that I know of.

Q. They are the same machines?

A. They are not the same, no; we got different machines.

Q. Did you get those from Prentice also?

A. Yes.

Q. What was the difference between the original machines that you had and the new ones?

A. Higher speed.

Q. How much more speed were the new ones?

A. If I can recollect correctly, I believe the old machines were about 450, and the new ones, about 1,700, approximately.

Q. I realize you are not a mechanic, but is it true of both the old machines and the new machines that you fed in your strip of material and it was operated on by the machine to make zipper elements and fasten them to a tape in space relation? A. That's right. [17]

Q. Were these changes of the machines made merely to speed up production, or for any other reason?

A. I wouldn't know. Production is the thing that interests me.

Q. Who brought about the change? Was it at the suggestion of Prentice, or was it at your request?

Defendant's Exhibit "BR"—(Continued)

(Deposition of Isadore Napp.)

A. The Prentice people were working on a machine to increase the speed for years, and when they developed it, and we found out about it, I requested we wanted those machines.

Q. When did you get the new machines?

A. I think about five or six years ago.

Q. Do you have any record of the receipt of those machines?

A. I haven't looked, but I am almost sure it is about six years.

Q. I think I asked you for that in the subpoena. Can you produce those records?

A. I don't know. I will have to look for them.

Q. Do you know if the new machines produced any better zipper than the old machines?

A. I wouldn't know that either. I know that you have to have a good zipper in order to sell it, and we didn't have any trouble with these. We didn't have any trouble with the old ones. I wouldn't know.

Q. Did you get these new machines to meet an expanding market and competitive prices?

A. Correct.

Q. Have you at your place of business made any changes in the machines furnished you by Prentice? [18]

A. No.

Q. Does Prentice ever from time to time furnish you with replacement parts which are improvements over the parts which they take the place of?

A. Well, our method of operation, any time a

Defendant's Exhibit "BR"—(Continued)
(Deposition of Isadore Napp.)

part wears out on their machines, we have to replace it with a part that they manufacture. If it is an improvement or not, that I can't tell you.

Q. Now the metal strip that you buy for the manufacture of zipper elements is of a flat band type .090 wide by .030 thick, is that correct?

A. We don't use that size. We use a hundred by thirty.

Q. A hundred by thirty. Is that the same size you were using in the old-type machines?

A. Yes.

Q. Where do you buy your metal strip?

A. Aluminum Company of America.

Q. Have you always purchased it from them?

A. Yes.

Q. And—

A. And pardon me, when we order metal from the Aluminum Company of America, we specify them to run the metal through the Prentice dies.

Q. Aluminum Company has Prentice dies there to—

A. I believe so.

Q. —to gauge their metal with, is that true? About the time [19] the war ended or in 1945, were your machines operating at 1,700 r.p.m.?

A. 1945—that's 10 years ago. No, they were not operating at that speed. They were slow speed.

Q. What speed was that?

A. About 450, I believe.

Q. About 450. Let me see, your faster machines, which ran at 1,700, were acquired then about 1949,

Defendant's Exhibit "BR"—(Continued)

(Deposition of Isadore Napp.)

is that correct? A. About that.

Q. Did the acquisition of these newer faster machines in any way affect the price at which you could put out your zippers?

A. It reduced our cost.

Q. Well, did you reduce your price then accordingly?

A. We had to reduce our prices on account of competition.

Q. Before you got machines from Prentice, the new machines I mean, did you see any of the new-type machines any place else? A. No.

Q. You didn't visit the Prentice plant or—

A. I visited the Prentice plant, I knew they were working on the machines, but to me, they all looked alike.

Q. Did you see any machines prior to 1949 which were identified to you as the new Prentice machines?

A. No. I have seen the machine, the experimental machine in the Prentice plant; that's about all.

Q. When was that?

A. That was right after the war, 1945, '46, something like that. [20]

Q. That experimental machine you are speaking of was the one that upped the speed to 1,700, wasn't it?

A. I wouldn't know that. I know it was a faster-type machine, but the speed, I wouldn't know.

Defendant's Exhibit "BR"—(Continued)
(Deposition of Isadore Napp.)

Q. But it was your understanding that the new machines you got were of the type, same type as the one you saw?

A. They told me they expected that machine to do better than a thousand units per minute.

Q. And as far as you know, that was the same type machine?

A. I believe so.

Q. Before you began using the new machines, do you remember what you were selling your 7-inch zipper for?

A. I don't remember that.

Q. I hand you a little card marked "price list, Roxy Slide Fasteners" and shows listings from 7 inches to 36 inches, and prices from 4½ cents for the 7-inch zipper to 16¼ cents for the 36-inch zipper, and ask you if you can identify that card?

A. I can't identify the card, and I couldn't even identify the prices. I don't even know what date it was.

Q. Do you recall at the time you met with representatives of the Talon Company and representatives of California Slide Fastener and Union Slide Fastener in the offices of Talon in Los Angeles, in 1949, that you handed the persons present cards listing your prices at that time?

A. I don't recollect handing the persons present any cards. [21] I do believe, however, that there was a question asked what the prices were, and I believe I submitted them, to the people present at that meeting.

Q. Does that card look familiar to you as one

Defendant's Exhibit "BR"—(Continued)

(Deposition of Isadore Napp.)

of the cards that you used to submit the prices?

A. I couldn't—it is a blank card. I wouldn't know, and I don't remember at that time what the prices were. I would have to look them up.

Q. Well, did you hand out some cards of that type? I don't mean that card necessarily.

A. I don't recollect that; I am sorry.

Q. It doesn't look at all familiar to you?

A. Any card with a price list on it wouldn't look familiar to me, because I don't know who wrote it, I don't know who sent it, and I don't know where it was gotten at.

Q. But did you hand out price lists on cards at that time?

A. I don't recollect that. I remember having the price structure with me, and it was an open book, there was no secret about it, what the prices were, and I told them what the prices were.

Q. I realize that is a long time ago and a lot has happened since.

A. But I don't know. It is the same as if I showed it to you; would you be able to tell me, if it came out of your office?

Q. As I said, I realize it was quite a while ago, but I was just wondering—— [22]

A. I don't recollect that. I would be glad to go back to the records and see what the price structure was in 1949, and give them to you, or give them to the court, as far as I am concerned.

Q. Do you recall that Talon reduced its prices

Defendant's Exhibit "BR"—(Continued)

(Deposition of Isadore Napp.)

on 7-inch pin lock aluminum zippers, skirt zippers, to 5 cents in the summer of 1949, and for that reason you reduced your prices on those zippers to 4½ cents?

A. I wouldn't recollect the exact dating on it, but when the reduction was made by the major companies, was made to 5 cents, we had to reduce them to 4½, whatever the date was.

Q. Was that at the same time the major companies reduced theirs? A. I believe so.

Q. Did California Slide Fastener and Union Slide Fastener reduce their prices also?

A. I never know what their prices were. They haven't got one price.

Q. Was the 4½ cents price on the 7-inch zipper a stable price, or were any further reductions made to say 4¼ cents or 4 cents?

A. I don't know the exact dates of different prices, but I know there were other fasteners sold on the market below those prices.

Q. Did you reduce yours below 4½ cents?

A. At what time?

Q. In 1949. [23]

A. I wouldn't be able to answer that, no sir, without looking up records.

Q. Or at any time, do you remember a price that you charged less than 4½ cents?

A. Charging less than that right now for them.

Q. How much? A. Three and a half.

Q. How long have you been charging that price?

Defendant's Exhibit "BR"—(Continued)

(Deposition of Isadore Napp.)

A. I would have to look up the records on that.

Q. I mean approximately.

A. I don't know; six months, seven months.

Q. Do you know, roughly, how far back it has been since you reduced from 4½ cents?

A. No, that would be hard to tell.

Q. You think it might have been two years ago, three years ago?

A. I still would have to look up the records.

Q. Do you recall at the meeting I referred to in the local Talon offices on September 30, 1949 whether there was any discussion about the stabilizing of zipper prices? A. I can't recall it.

Q. What was the purpose of that meeting?

A. I don't know what the purpose of the meeting was, but there was a question I believe at that time about another zipper coming out to the Coast here, to be manufactured by the Talon people. I believe [24] the name was Wilzip, below the price of the Talon fastener, and there were rumors they were going to bring the zipper here to the Pacific Coast. And I believe the whole topic of conversation was to try to ask Talon people to try and keep Wilzip out of this market here, if possible.

Q. What reason did they give for bringing the Wilzip out here?

A. I don't believe they gave any reasons for bringing the zipper out here, because they didn't have it out here.

Q. Who called that meeting?

Defendant's Exhibit "BR"—(Continued)
(Deposition of Isadore Napp.)

A. I don't know.

Q. How did you happen to get there?

A. I had a telephone call from Mr. Eisenberg, I believe, there was going to be a meeting. I was to tell him if I would attend. I don't know whether Mr. Lipson called or not. I remember Mr. Eisenberg calling.

Q. Was that all that was said, that Talon was going to bring the Wilzip out?

A. That was the topic of conversation.

Q. And you don't recall any reason given for bringing it out here, is that true?

A. They were not here with the zipper yet.

Q. They had the Talon zipper here?

A. They had the Talon; they didn't have the Wilzip.

Q. Why was it they had to call a meeting, to tell the competitors they were going to bring a new zipper out?

A. I don't know who called the meeting. [25]

Q. Who presided at the meeting?

A. I don't think anybody presided at the meeting.

Q. Who did most of the talking?

A. I did.

Q. You did? What were you talking about?

A. Trying to sell them the idea they shouldn't bring the Wilzip out here, it wasn't necessary.

Q. What do you mean by wasn't necessary?

A. That the competition wasn't of that nature,

Defendant's Exhibit "BR."—(Continued)

(Deposition of Isadore Napp.)

out here, and I think the boys were trying to uphold the price and make a living out of the zipper industry.

Q. Did either Mr. Yeager or Mr. Detweiler of Talon say anything about trying to uphold the price?

A. I don't believe they did; I don't believe they did. I can't recollect, though.

Q. In other words, you merely got together in Talon's offices and Talon said for no reason at all, said they were going to bring out the Wilzip zipper, is that true?

A. They didn't say anything.

Q. How do you know the Wilzip zipper was around? A. There were rumors around.

Q. Did either Mr. Yeager or Mr. Detweiler say anything about introduction of the Wilzip zipper back East and its effect on smaller manufacturers?

A. Not that I recall. [26]

Q. Now, this improved machine that we referred to, of the type which you now have in your factory, and of the type which you saw at Prentice, is it not a machine into which you feed metal strip and tape and which forms zipper elements and attaches them to the tape?

A. Well, that's the same answer; yes, it goes for the old-type machine too.

Q. And that same improved machine which is the type you have, and the type that they have at Prentice, this experimental machine, operated at

Defendant's Exhibit "BR"—(Continued)
(Deposition of Isadore Napp.)

1,700, is that right? A. That's right.

Q. Have you talked to anyone other than Mr. Hepworth about the matter of this testimony?

A. I haven't talked to anybody. I haven't even talked to Mr. Hepworth about this testimony.

Pardon me, I spoke to the Prentice people, and I told them that I got this subpoena, and I asked them what kind of information they can get out of me, when they can get all of the information out of them; they have all the drawings and papers available; and they tell me that Mr. Lipson called them on the phone, and they would get in touch with their attorneys, Eastern attorneys. That's about all the conversation I had with anybody. (This entire paragraph doesn't register and doesn't make sense to me. I.O.N.)

Q. Did they tell you that they had informed Mr. Lipson that you could testify regarding the machines?

A. They did not. They wrote me a letter, on June 22nd. The contents of the letter: [27]

"Dear Mr. Napp:

"Sometime ago you advised us that you were invited to testify in court regarding the Prentice zipper machine owned by our company which you operate in California under our license. Please be advised that under our exclusive agreement with the Roxy Thread Company, you understand that our machines employ special methods and develop know-how that should not be known or divulged to

Defendant's Exhibit "BR"—(Continued)

(Deposition of Isadore Napp.)

anyone except your own mechanic employees."

And as a matter of fact, the employees that are employed in my place today were taken from the Prentice plant, and I didn't divulge anything to anybody, because I don't know what to divulge.

And signed by Mr. Trup, president.

Q. It was my understanding that let's see, around 1945, you had machines that operated as fast as 1,700 r.p.m., is that true?

A. That's not so.

Q. How fast did they operate at that time?

A. About 450.

Q. You didn't have any that operated at 1,200?

A. No.

Q. Not even a thousand? A. No.

Q. Has anyone at any time discussed with you the matter of giving testimony in this litigation?

A. No, except Mr. Lipson was over at my house a few weeks ago, and he discussed with me about testifying in this case, and I [28] explained to him at that time for him to get the proper knowledge and the actual workings of the machine, take the matter up with the Prentice people, that I was sure they would be able to give him all the information he was looking for.

Q. Have you ever discussed any phase of this litigation with anyone at the offices of Lyon & Lyon, anyone connected with those offices? A. No.

Q. With Mr. Meech of the Talon Corporation?

A. Mr. Who?

Defendant's Exhibit "BR"—(Continued)
(Deposition of Isadore Napp.)

Q. Meech. A. I don't know him.

Q. With an attorney by the name of McCoy in Cleveland? A. I don't know the gentleman.

Q. You have never discussed the case at all with any of those people?

A. I don't know them, never heard their names before.

Q. Or any representative of the Talon Corporation? A. No.

Mr. Mockabee: I believe that's all. Thank you very much, Mr. Napp.

(Deposition of Witness Napp concluded at 12:35 p.m.) [29]

Signature of Witness

The undersigned certifies that he has read the foregoing testimony adduced at the place and on the date shown in the above-entitled cause; that the twenty-nine (29) pages of testimony constitute a full, true and correct transcription of said testimony; and that changes, alterations or modifications, if any, have been noted by the notary public, Florence J. Farnsworth, at my suggestion, and initialed by me in each instance.

Los Angeles, California, 8/9/1955.

/s/ ISADORE NAPP,
Deponent. [30]

[Endorsed]: Filed Sept. 27, 1955.

DEFENDANT'S EXHIBIT "BS"

[Title of District Court and Cause.]

DEPOSITION OF WILLIAM U. HEPWORTH

Deposition Suite, Offices of Vernon L. Polk & Associates, 541 South Spring Street, Suites 316-17, Los Angeles 13, California, Wednesday, July 20, 1955.

Appearances: For the Plaintiff: None. For the Defendant: Allan D. Mockabee, Esq., Attorney at Law, 4063 Radford Avenue, Studio City, California. POplar 6-1389. [1]*

Whereupon,

WILLIAM U. HEPWORTH

a witness called by and on behalf of the Defendant, after being first sworn by Vernon L. Polk, CSR, a notary public in and for the County of Los Angeles, State of California, was examined and testified as follows:

Direct Examination

Q. (By Mr. Mockabee): Mr. Hepworth, will you please state your full name and address?

A. William U. Hepworth, 4430 West 63rd Street, Los Angeles (43).

Q. What is your occupation at the present time?

A. Maintaining zipper machines.

Q. At what place?

A. What do you mean, what place?

* Page numbers appearing at top of page of Original Deposition.

Defendant's Exhibit "BS"—(Continued)
(Deposition of William U. Hepworth.)

Q. At what place?

A. Oh, at Roxy Thread Company, 849 South Los Angeles Street.

Q. You speak of zipper machines; just what do you mean by a zipper machine?

A. Well, it is a machine that stamps out the metal and clamps it onto the tape and manufactures a continuous chain zipper, or in sizes.

Q. I might mention before we go any further, just so you fully understand what this proceeding is, as you probably know, I am going to ask you questions, and you are to answer them, under oath, [2-3] just like you were in court. These depositions are taken to be incorporated in the record of a case now pending in the United States District Court for the Southern District of California. You will be given a copy of these depositions and have an opportunity to correct them if any mistakes have been made, and you will then sign it and swear to it before a notary public.

The fact that no counsel have appeared on the other side does not make the proceeding any less formal than if counsel had appeared or if testimony were given in court.

One other thing: I am not trying to frighten you or anything like that.

A. I am not frightened.

Q. But I would like to have you be very careful with your answers, because we have information to the effect that this particular infringement suit is

Defendant's Exhibit "BS"—(Continued)

(Deposition of William U. Hepworth.)

being investigated by the Department of Justice, Antitrust Division.

Mr. Lipson: I showed the letter to Mr. Napp.

Q. (By Mr. Mockabee): You stated that you are a maintenance man. Would you please briefly state what your training is in the mechanical field in general, and in the zipper machine field in particular?

A. Well, I was trained by G. E. Prentice Manufacturing Company, in Berlin, Connecticut, and went to school there for a number of weeks, learnt the setup of the presses.

I don't know what else you want to know about it. [4]

Q. In that course of instruction at the Prentice Company, were you instructed as to the complete construction and operation of their zipper manufacturing machines?

The Witness: You want to repeat that last part again?

(Last question read.)

A. Only the operation of the machine, is all that I was instructed on.

Q. At that time did you learn anything about the manner in which the machine was built?

A. No.

Q. Did you become familiar with any of the functional parts of the machine?

A. Just the setting up of the machine.

Q. What do you mean by setting up?

Defendant's Exhibit "BS"—(Continued)
(Deposition of William U. Hepworth.)

A. Well, if a part would wear out, it would be given to you and you would just replace the part. Is that what you meant?

Q. You would replace it in the machine?

A. Yes, it would be supplied to you.

Q. So as a school of instruction, the purpose and result was that you learned the various parts of the machine which were taken out and put back in, is that correct? A. That is correct, yes.

Q. Had you had any previous education or experience with punch presses?

A. I had had no mechanical experience before. I used to [5] manage a grocery store.

Q. When did you go to the school at Prentice Manufacturing Company?

A. I would say approximately 1938.

Q. And you have been engaged in maintaining or working with zipper machines since that time?

A. That is true.

Q. Where have you been employed in connection with the maintenance of zipper manufacturing machines?

A. At G. E. Prentice Manufacturing Company, and I was there approximately two years. And they opened up their Los Angeles plant here, and they I believe operated it approximately a year and it was sold to the Stronghold Manufacturing Company. That is Stronghold Fastener Company, I believe it is. And they hung onto it about a year, and Roxy Company bought it over, and I would say that was

Defendant's Exhibit "BS"—(Continued)

(Deposition of William U. Hepworth.)

approximately, oh, 1940, approximately, and I have been with them since then.

Q. Do you have any connection with the Prentice Company at the present time?

A. Do I have any?

Q. Yes.

A. No, I work for Roxy Company.

Q. Were the machines at the Prentice Company when you received your instruction, and those at Roxy Thread Company, the same general types of machines?

A. Were they punch presses, is that what you mean? [6]

Q. Let me be more specific: Were they the same general types of zipper manufacturing machines?

A. In general, except for a few new—a new process of doing the operation. In other words, it had no slide.

Q. What do you mean by "slide"?

A. The slide would be underneath the die and the punch press would push the unit through the die to be picked up by the slide and then the slide would push it out and clamp it on the tape with a pair of knockers.

Q. What machine is that you are describing?

A. Well, that is the old-type punch press.

Q. The old-type punch press, you say?

A. Yes.

Q. Is that the type used at Prentice Manufacturing Company in instructing you?

Defendant's Exhibit "BS"—(Continued)
(Deposition of William U. Hepworth.)

A. Yes, sir.

Q. Is that the type that is and has been used by Roxy Thread Company?

A. Not completely, no. We have had new machines in the last approximately six years.

Q. Were there any machines at Roxy Thread Company when you went to work for them which did not have the slide? A. No.

Q. When did you first see a machine at Roxy Thread Company without a slide?

A. At that approximate time, about five or six years ago. [7]

Q. Referring to the machines at Prentice Manufacturing Company, when you were there, and those used by Roxy Thread Company when you went to work for Roxy, did those machines have mechanisms for intermittently feeding a flat band or strip into the machine towards the punches on the ram?

A. In other words, did it have a stock feed that fit in the metal?

Q. Yes, in the form of a flat strip?

A. In a flat ribbon strip.

Q. It did, is that true?

A. It had a stock feed to feed the metal in. They have to have a stock feed to feed the metal in.

Q. And these machines had it?

A. Yes. You are speaking technically, and we don't speak so technically, that is the whole thing;

Defendant's Exhibit "BS"—(Continued)

(Deposition of William U. Hepworth.)

I have to stop and think. You are using different terms.

Q. I am using different terminology than you do?

A. That we don't use.

Q. And there was on these machines at Prentice and when you first went to Roxy, a vertically movable punch carrier, or ram?

A. Yes. It's the one and the same machine, is that what you are trying to get at?

Q. I was just trying to identify some of the parts of the machine.

A. It's one and the same machine, what we worked on at [S] Prentice Manufacturing Company is exactly the same machine as when Mr. Napp took it over, if that is what you were trying to get at, or you are just trying to identify certain parts of the machine, am I correct?

Q. That is true, but I also want to identify some parts of it.

And I suppose these machines to which we have referred also had means for feeding a cloth tape to a predetermined position in the machine?

A. That is correct.

Q. At which point the formed elements were applied to the tape? A. That is correct.

Q. When the metal stock or strip was fed into the machine, was it in the form of a smooth flat strip? A. Yes, .100 by .030.

Q. When a portion of the stock or strip was fed beneath the punches, did the punches on the verti-

Defendant's Exhibit "BS"—(Continued)
(Deposition of William U. Hepworth.)

cally movable ram fully form the fastener element?

The Witness: Would you repeat that again?

(Last question read.)

A. No, that didn't fully form it. Originally we had a bushing that formed the tit on the unit, and then it rested in a recess and was punched off of the next operation. Then it was a complete unit.

Q. I didn't mean that they were all formed in one punch.

A. Well, that's the way I understood you to say.

Q. But they were all formed by the single punch carrier or ram, which moved vertically? [9]

A. That's correct.

Q. And the tit or the—

A. You are speaking of the old presses, I imagine, what we used at Prentice?

Q. The old presses that were at Prentice, and that were at first at Roxy? A. Yes.

Q. So that you first formed the tit or recess and projection and then on a succeeding down stroke of the punch carrier, the remainder of the element was formed?

A. The remainder was punched out, punched through the die and onto the slide.

Q. And after punching out the element, was it then applied to the tape and secured to it?

A. It was carried forward by the slide and knockers clinching on the tape.

Q. How far forward was the carrier?

A. I would say about an inch and a half, because

Defendant's Exhibit "BS"—(Continued)

(Deposition of William U. Hepworth.)

the sliding mechanism had to push the knockers out, the carrier, to really elinch it on the tape.

Q. Had to push what out?

A. Push the knockers out.

Q. Describe the knockers, please.

A. Well, the knockers is a piece of, two pieces of steel that are formed to elinch the element onto the tape. [10]

Q. In other words, the slide operated to separate the elinching members, is that what you mean?

A. No, I don't mean that. The front mechanism separates the spacing of the unit.

Q. I don't mean the spacing of the elements. I am speaking of the separation of the knockers or closing jaws as we have called them in the case.

A. Yes.

Q. Is it my understanding that the slide moves the knockers or closing jaws apart so that the element can be placed in position on the tape and then the knockers or closing jaws are brought together to elinch the element on the tape?

A. The knockers elinch the element on the tape. It's all being timed between the punch and the slide.

Q. What operates the knockers?

A. The slide pushes the knockers out.

Q. What operates the slide?

A. Well, you have a back ram that comes in like this (illustrating); and you are timing your vertical ram with the back ram.

Defendant's Exhibit "BS"—(Continued)
(Deposition of William U. Hepworth.)

Q. Is the rack, or as you have indicated with your hand, horizontally movable slide actuating ram, operated from the main shaft which raises and lowers the punches? A. That is true.

Q. Would you say that the machine which we have been discussing is an eccentric press? [11]

A. What do you mean by that?

Q. One which is operated by connecting rods, connected from eccentrics on the main power shaft to the punch carrier?

A. It is a crankshaft machine.

Q. With connecting rods and eccentrics, is that true? A. Yes.

Q. All of the mechanism for feeding the stock or metal strip and the tape and for forming and applying the elements to the tape is mounted on a unit on a base, is that true? A. That is true.

Q. Is the ram upon which the punches are carried vertically slidable between a pair of gibs or posts?

A. Does it come out, in other words, is that what you mean?

Q. Does it slide up and down between a pair of gibs or posts? A. No, it is stationary.

Q. I am speaking of the punch carrier.

A. In other words, the ram.

Q. The ram?

A. Yes, the vertical ram. It is stationary. It just has a circular motion.

Q. Has no vertical motion?

Defendant's Exhibit "BS"—(Continued)

(Deposition of William U. Hepworth.)

A. Well, just at the crankshaft point, where it goes around. It is the crankshaft point that drops the——

Q. Drops the ram, is that true?

A. Yes. [12]

Q. Now, what guides the ram, in other words?

A. Well, it has gates to guide the ram.

Q. Are there grooved or channeled posts on either side of the ram?

A. Deep channel, yes, on either side. This ram can be raised or lowered, you know.

Q. To adjust the stroke?

A. To adjust the stroke.

Q. Yes. A. But is only a short stroke.

Q. But I was speaking of the general operation movement.

A. It is just a crankshaft, drops down and comes back up.

Q. Do you recall how long a stroke that has, the ram?

A. I believe it was an inch and a half. Now, I am guessing that. I don't actually know. I would guess it to be that.

Q. Did these earlier machines you speak of operate to produce a single zipper stringer, or two zipper stringers, at the same time?

A. They were single. One side is all they produced.

Q. Were the newer machines single or double-header machines?

Defendant's Exhibit "BS"—(Continued)
(Deposition of William U. Hepworth.)

A. They were single; they are single.

Pardon me, I imagine you are speaking about the streamlined unit, aren't you?

Q. I am speaking——

A. Zippers in general, are you speaking? [13]

Q. I am speaking of machines that make one or two stringers simultaneously.

A. No, we make one stringer, and always have, on both the new and the old machine.

Q. Did any of these machines in the formation of a zipper element completely punch out any material from the strip?

A. That is the complete element, all in one stroke?

Q. No, I am speaking of the manner in which it is formed in first the recess and projection, and then in the remainder of the element being punched out. In its formation, is any part of the strip punched out and wasted?

A. No, none at all.

Q. In forming the zipper elements, which as you have described results from punching them out of the metal strip or stock, is the head, or what ends up as the projecting portion of the zipper element on the tape, formed by punching out a part of the stock and simultaneously forming the legs of the next element?

A. Which machines are you speaking of?

Q. On any of them; if so, describe which.

Defendant's Exhibit "BS"—(Continued)

(Deposition of William U. Hepworth.)

A. No, the projection, as you call it, is formed by either a bushing in a tit punch—

Q. No, I believe you misunderstood me. I mean the head end as distinguished from the leg end of the element; is the head end formed by punching out material in the strip which also forms the legs of the next element? [14]

A. It is punched out in one operation. You form the head and the legs without scrap, in one operation.

Q. And the head of the lead element comes out of the portion between the legs of the following element, is that true? A. That is true, yes.

Q. Is one element completed at each stroke of the ram?

A. One element is punched out at each stroke of the ram.

Q. In other words, it is completely formed except for the just preceding formation of the tit or recess and projection?

A. That is true. The tit and the cup hole is formed in one operation.

Q. Are the closing jaws for clamping the elements on the tape mounted in a manner in which they slide on the machine?

A. They slide in a holder.

Q. What actuates the jaws? Is it a lever actuation, a cam actuation, or what is it?

A. It is a cam actuation.

Defendant's Exhibit "BS"—(Continued)
(Deposition of William U. Hepworth.)

Q. And the jaw actuation is timed in sequence with the operation of the punches, is that true?

A. Yes, to a degree.

Q. In other words, is there a synchronized movement of the ram with its punches, and the movement of the jaws?

A. The movement of the ram; it is synchronized with the movement of the ram.

Q. The jaws are? [15] A. Yes.

Q. Is the means for feeding the metal strip a roller feed? A. Yes, the roller stock feed.

Q. Are the rollers corrugated or in some way surfaced so that they grip the strip?

A. Well, you see, you are talking about two different machines. One——

Q. Are they different on the two machines?

A. They are different on the two machines, yes.

Q. What type of feed was on the earlier machine? A. A flat roller feed.

Q. Smooth roller, you mean?

A. Smooth roller, yes, sir.

Q. And on the later machine?

A. It is a corrugated one.

Q. Are the rollers under spring pressure of any kind? A. Yes, sir.

Q. Are they both driven? A. Yes, sir.

Q. What type of intermittent feed mechanism is used in connection with the feed rollers?

A. Well, they work off the main cam.

Q. Isn't that roller operation intermittent? Do

Defendant's Exhibit "BS"—(Continued)

(Deposition of William U. Hepworth.)

the rollers rotate continuously, or do they stop at intervals? A. They stop at intervals. [16]

Q. What gives this intermittent motion to the rollers?

A. Well, on the old press, we used to work them with chain, that had a lug on it, that would throw it. On the new one, it just works off the cam and stops the stock feeding. The punch still goes up and down, but the stock stops dead.

Q. There is no ratchet feed of any kind?

A. Yes, there is a ratchet feed.

Q. What type of tape feed was on the two types of machines? A. A ratchet feed tape puller.

Q. Did the tape feed have one or two rollers?

A. Double rollers.

Q. Double rollers? On both machines?

A. Both machines.

Q. Are those rollers under pressure toward each other? A. Spring pressure.

Q. Is any means provided in the form of a brake or similar device to prevent the tape from backing up?

A. On the old machines, there was a device, a roller spring device to prevent that.

Q. You mean a separate roller device from the feed rollers?

A. In between the two rollers, there was one that held the sizing.

Q. By sizing you mean tape, is that true?

A. Yes, sir.

Defendant's Exhibit "BS"—(Continued)
(Deposition of William U. Hepworth.)

Q. Did either of the machines referred to have any means [17] for holding the tape under tension? That is, that portion of the tape upon which the zipper elements are being applied?

A. Well, it was held under tension from beneath, by a tape clamp.

Q. Was that a friction shoe or something like that?

A. It was just a set of clamps with a clearance for the bead to go through.

Q. The bars or rods pressed together?

A. That's right.

Q. And the tape spread between them to retard the movement of the tape or to hold it under tension?

A. To hold it under tension so that you could space each unit a correct amount of distance apart.

Q. They were on the old machines and the new machines, is that true?

A. That is correct, in different, in a little different forms, slightly.

Q. But the function was the same?

A. The same idea, yes, under the spring tension.

Q. Do you remember when you first went with Prentice, or while you were with Prentice, the speed of operation of those machines?

A. This would be purely a guess on my part: I would say about 275 to 350, in those days.

Q. Upon what do you base your guess?

Defendant's Exhibit "BS"—(Continued)

(Deposition of William U. Hepworth.)

A. Well, we did time some older machines. It just looked [18] about that, as a guess.

Q. Did you have any method for timing the speed of machines?

A. We did a number of years ago, yes.

Q. How did you do that?

A. Well, you have an automatic timer that you stick on the flywheel that counts the revolutions of the machine.

Q. And from the number of revolutions you could compute the speed of the machine?

A. Plus the work of the machine.

Q. Were the Prentice machines speeded up while you were working for Prentice?

A. Well, they were slightly; maybe once while I was there, they speeded them up slightly.

Q. Do you know approximately how much that would be? A. No, I don't.

Q. Were the machines at Roxy Thread Company speeded up to any extent?

A. Yes, we speeded them up to 500 revolutions a minute.

Q. Do you know when that was?

A. Oh, approximately 1941 or 1942.

Q. Have they been increased in speed since then?

A. In the new type of machine. We don't have any, haven't had any old type machines in five or six years now. The new type has been speeded up.

Q. How fast do they operate? [19]

Defendant's Exhibit "BS"—(Continued)
(Deposition of William U. Hepworth.)

A. We haven't timed them, but the new motors we put on are supposed to be about 1,700.

Q. Would the motor speed reflect the production speed of the machine? A. Oh, yes.

Q. How did you determine the speed up to 500 revolutions in 1941 or 1942?

A. We had a timer that we did timing with.

Q. Did you do the timing, or did someone else do it? A. Someone else did the timing.

Q. Did you witness it? A. I witnessed it.

Q. And the old Roxy machines were not speeded up above 500, is that true?

A. No, that type of machine wouldn't — it wouldn't be profitable to speed it up, I don't imagine.

Q. Why is that?

A. Well, it was a belt-driven machine.

Q. You mean there was a belt from the motor to the main shaft of the machine?

A. That's true.

Q. Was the machine itself capable of faster operation with a different type of drive?

A. The same machine? That's my opinion, you are asking for? [20]

Q. Yes, from your experience with zipper machines.

A. Well, the cam probably would have to be worked over, and you had too long a stroke in it. With an inch and a half stroke, it had a sliding key that if it ever shut off without any braking

Defendant's Exhibit "BS"—(Continued)

(Deposition of William U. Hepworth.)

device, it would fly all around the room. You couldn't stop it. It would have to be redesigned entirely.

Q. Could that change adapted to a higher speed be made by a person familiar with the operations of the machinery?

A. I wouldn't say so, no, not familiar with the operation; familiar with building a zipper machine.

Q. A person familiar with building zipper machines? A. I would say so.

Q. Were you familiar with the building of zipper machines?

A. No, I am just familiar with the operation of the machine.

Q. Do you know how to compute machine production speed from the speed of the motor, the speed of the main shaft, or the speed of the motor and the size of the pulleys on the main shaft?

A. I would know if I knew how many units per inch.

Q. How many zipper elements per inch?

A. Yes.

Q. How do you figure that?

A. Well, you would have so many revolutions a minute, and you would count the inches that a person was putting out, and you could figure out how many—

Q. Just simple arithmetic, is that it? [21]

A. Just simple arithmetic.

Defendant's Exhibit "BS"—(Continued)
(Deposition of William U. Hepworth.)

Q. Yes. On these old machines, what was the motor speed?

A. The speed I don't know. I know, I told you the speed that the press was running.

Q. These old machines were motor-driven, weren't they? A. Yes, belt-driven.

Q. From a motor? A. Yes, sir.

Q. Do you remember the sizes of the pulleys on the motor, pulley on the motor?

A. Well, we had a series of pulleys. The 5-inch was the one that took us to 500, I am fairly sure of that.

Q. Five-inch pulley on the motor shaft?

A. Yes.

Q. Do you remember the pulley on the crankshaft of the zipper machine?

A. Just the flywheel is on there.

Q. Well, the belt ran from the motor pulley to a pulley on the—— A. To a flywheel.

Q. To a flywheel? A. Yes.

Q. How big was the flywheel?

A. I don't know.

Q. Would you approximate the size of it? [22]

A. Fifteen inches.

Q. Fifteen? A. In diameter.

Q. Then your motor I suppose ran at 1,750, is that it? A. On the old machines?

Q. Yes. A. No.

Q. The electric motors? How fast, 1,725?

Defendant's Exhibit "BS"—(Continued)

(Deposition of William U. Hepworth.)

A. 1,700 on the new ones, the plate states. I believe I told you I didn't know what the——

Q. Oh, I beg your pardon.

A. The one on the old machines ran; but it did run 500 revolutions a minute on a 5-inch pulley.

Q. It was a standard motor?

A. It was a standard motor.

Q. And that was you say 500, that was on the Roxy machine, on the old Prentice machine?

A. Yes.

Q. On a No. 3 zipper, do you recall the spacing of the zipper element or the number of elements per inch on the tape?

A. I don't know anything about a No. 3.

Q. Do you know the——

A. We only make streamline out here, No. 2's.

Q. No. 2, what is the number of elements per inch on those? A. Thirteen per inch. [23]

Q. Prior to the giving of this testimony, have you discussed the matter with anyone?

A. Just with Mr. Napp, that's all.

Q. What was the general trend of your discussion?

A. Just the process of the new machine, and how we made the zipper.

Q. Weren't you already familiar with it?

A. I was, but Mr. Napp wasn't, not familiar.

Q. Oh, I see; you were sort of bringing him up to date on how his machines worked, is that true?

A. The technical data on it. Mr. Napp could

Defendant's Exhibit "BS"—(Continued)
(Deposition of William U. Hepworth.)

work on the old machines slightly, very, very slightly, but the new ones, he hasn't done anything on them.

Q. Did you discuss the giving of this testimony with anyone else?

A. No. You mean about the subpoena? I told the office man that I got a subpoena.

Q. No, I meant the testimony which you were going to give. A. No.

Q. Did anyone, Mr. Napp or anyone else, give you instructions as to what to testify to?

A. Just tell the truth, that's all.

Q. Fine. Do you know where the present Roxy Thread Company machines came from?

A. From Prentice. [24]

Q. They were purchased from Prentice, is that true?

A. They are licensed by Prentice. They own the machines.

Q. Prentice or Roxy? A. Prentice.

Q. Oh, Prentice owns them and leases them to Roxy Thread? A. That is correct.

Q. Do the Roxy Thread machines have any serial numbers? A. I believe they do.

Q. Do you know what they are?

A. I don't know.

Q. Roughly?

A. I wouldn't even guess. I don't know anything about it. I know they have a plate on them.

Defendant's Exhibit "BS"—(Continued)

(Deposition of William U. Hepworth.)

Q. Do you recall if the numbers are over or under a hundred?

A. I wouldn't even guess, because I don't know.

Q. How many machines does Roxy have?

A. Nine.

Q. Have you at any time seen any other zipper manufacturing machines? A. No, I haven't.

Q. Did you have any, or did Roxy Thread have any machines in 1940 or 1941 which operated as high as 1,200 r.p.m.? A. No.

Q. Did you ever see any motors on any Roxy machines which stated a speed of less than 1,725 r.p.m.? [25] A. No, sir.

Q. I believe when we first started talking about speed of machines, you said something about the machines at Prentice when you were there, operating at 275 to 350 r.p.m.?

A. That is a guess.

Q. Now, based on your knowledge of ordinary standard electric motors, with I think you said about a 5-inch pulley on the motor shaft, is that correct? A. That is correct.

Q. Wouldn't you have to have a pretty good-size flywheel on the zipper punch press to get down to a speed of 275 to 350?

A. Mind, your pulley is regulating your speed; your flywheel remains the same.

Q. I mean with a 5-inch pulley and—

A. Now, you are speaking about Prentice machines now?

Defendant's Exhibit "BS"—(Continued)
(Deposition of William U. Hepworth.)

Q. Yes.

A. Prentice machines, at Prentice, never had a 5-inch pulley.

Q. Do you remember how big they were?

A. I couldn't tell you.

Q. Approximately?

A. Not even approximately.

Q. You remember approximately what size the flywheel was on the Prentice?

A. The same size as what Roxy has. [26]

Q. About 15 inches I think you said?

A. That's a guess.

Q. Approximately?

A. Yes, Prentice was belt-driven, belt-driven from overhead, whereas Roxy was individually mounted motors.

Q. Just to clarify one little thing there: In the mechanism for forming the elements, do the punches carried by the vertically reciprocating ram, reciprocate downwardly toward and upwardly away from cooperating dies?

A. Up-and-down motion, correct.

Q. And the dies are stationary on the base and the punches are movable with the ram, is that correct? A. Yes, sir.

Q. And the punches are all located close together on the under side of the ram block?

A. In a punch block.

Q. In a punch block. At the time you went to work for Prentice, and after you had been there a

Defendant's Exhibit "BS"—(Continued)

(Deposition of William U. Hepworth.)

while, did you know the comparative speeds of Prentice machines and those of other manufacturers?

A. No, I didn't. I didn't even know there was any other manufacturers when I first went there.

Q. Did you later learn the comparative speeds of Prentice machines with those of other machines?

A. Just hearsay, from what is in the trade, every zipper man would know. [27]

Q. How did the speed of the Prentice machine compare with the speeds of other machines?

A. Well, I didn't know that until many years later, in fact, until I was out here in Los Angeles.

Q. Do you know Howard Treloar?

A. Yes, sir.

Q. Is he employed by Roxy? A. Yes, sir.

Q. Was he employed by Roxy before or after you? A. About the same time.

Q. Do you know when he first was employed by Prentice?

A. No, I don't. It was a few years before myself.

Q. What is his capacity with Roxy Thread Company? A. He is a maintenance man.

Q. He does the same type of work that you do?

A. Yes, sir.

Q. Who grinds the tools at Roxy Thread?

A. We grind the tools.

Q. That is, you and other employees?

A. Yes, sir.

Defendant's Exhibit "BS"—(Continued)
(Deposition of William U. Hepworth.)

Q. How many of you?

A. Just the two of us.

Q. What portions of the machine require grinding or regrinding?

A. The punch and the die, and the insert, I should say. [28]

Q. The die insert, you mean? A. Yes.

Q. Do you as a part of your duties periodically check the machines to determine whether the punches need resharpening or regrinding?

A. Yes, sir.

Q. As your tools wear to the point where they need replacement, who makes the new tools and new punches?

A. They are purchased from Prentice.

Q. They are purchased?

A. The Prentice Manufacturing Company.

Q. Are there any facilities at Roxy Thread for manufacturing and replacing any parts on the machines? A. Just the knockers, that's all.

Q. The knockers are what we have called the—— A. That closes the elements.

Q. The closing jaws? A. Yes, sir.

Q. Who makes the new knockers?

A. Treloar makes the new knockers.

Q. Do you make any parts for the machines at all? A. No, I don't.

Mr. Mockabee: I think that's all. Thank you very much, Mr. Hepworth.

(Deposition of Witness Hepworth concluded at 11:30 a.m.) [29]

The undersigned certifies that he has read the foregoing testimony adduced at the place and on the date shown in the above-entitled cause; that the twenty-nine (29) pages of testimony constitute a full, true and correct transcription of said testimony; and that changes, alterations or modifications, if any, have been noted by the notary public, Florence J. Farnsworth, at my suggestion, and initialed by me in each instance.

Los Angeles, California, August 9, 1955.

/s/ WILLIAM U. HEPWORTH,
Deponent. [30]

[Endorsed]: Filed Sept. 27, 1955.

[Endorsed]: No. 15714. United States Court of Appeals for the Ninth Circuit. Talon, Inc., a corporation, Appellant, vs. Union Slide Fastener, Inc., a corporation, Appellee. Transcript of Record. Appeal from the United States District Court for the Southern District of California, Central Division.

Filed: September 13, 1957.

Docketed: September 18, 1957.

/s/ PAUL P. O'BRIEN,
Clerk of the United States Court of Appeals for
the Ninth Circuit.

United States Court of Appeals
For The Ninth Circuit

No. 15714

TALON, INC.,

Plaintiff,

vs.

UNION SLIDE FASTENER, INC.,

Defendant.

STATEMENT OF POINTS FOR
PLAINTIFF-APPELLANT

The points of error of the District Court which plaintiff intends to urge on appeal from the judgment of the Court in favor of defendant in the above-entitled action are as follows:

I.

The District Court erred in adjudging that Claims 1 through 4, 16 and 17 of United States Letters Patent No. 2,078,017 to Poux are invalid and void.

II.

The District Court erred in adjudging that Claims 1 through 4, 16 and 17 of United States Letters Patent No. 2,078,017 to Poux are not infringed by defendant.

III.

The District Court erred in adjudging that Claims 1 through 4, 13 and 32 through 40 of United States Letters Patent No. 2,437,793 to Silberman are invalid and void.

IV.

The District Court erred in adjudging that Claims 1 through 4, 13 and 32 through 40 of United States Letters Patent No. 2,437,793 to Silberman are not infringed by defendant.

V.

The District Court erred in adjudging that defendant have and recover from plaintiff the sum of \$20,000.00 in attorneys' fees.

VI.

The District Court erred in finding that Sundback Patent No. 1,331,884 was in successful use prior to Poux Patent No. 2,078,017.

VII.

The District Court erred in finding that Poux Patent No. 2,078,017 did not solve a problem but its disclosure merely stated a problem and a desirable end result or that it did not teach a workable manner or means of accomplishment of the desired result.

VIII.

The District Court erred in failing to find that Poux Patent No. 2,078,017 disclosed a method and an apparatus for carrying out the method which could be made fully operative and functional without the exercise of invention by any person having ordinary skill in this art.

IX.

The District Court erred in finding that Claims

1 through 4, 16 and 17 of Poux Patent No. 2,078,017 are invalid by reason of a prior disclosure in the art of the method of achieving the end result desired by Poux.

X.

The District Court erred in failing to find that while plaintiff's machine, Exhibit 5, has improvements over Silberman Patent No. 2,437,793 the same embodies the patented invention of said patent and each of the essential elements thereof or its full mechanical equivalent.

XI.

The District Court erred in finding that the patent to Smith No. 1,533,352 relating to paper box fasteners is in an art related to the alleged method of the claims in issue of Poux Patent No. 2,078,017.

XII.

The District Court erred in finding that plaintiff's proof fails to show that a machine of the claims in issue of Silberman Patent No. 2,437,793 ever operated.

XIII.

The District Court erred in entering Finding No. XXI and in permitting the defendant to attempt to impeach its own witness, Loew.

XIV.

The District Court erred in finding that Silberman entered into a verbal license agreement with defendant and subsequent actions of defendant including expansion of defendant's facilities for manufacturing zippers were made in reliance upon that license.

XV.

The District Court erred in finding that defendant relied upon plaintiff's McKee's statement to defendant's Loew that no patents of plaintiff were infringed, and in reliance upon that statement, defendant continued to work on machines it was manufacturing and expended money in expanded manufacturing facilities.

XVI.

The District Court erred in entering Finding No. XXV reading as follows:

"Letters, Exhibits 15 and 18, alleged to be notices of infringement on behalf of Silberman to defendant, were written prior to Silberman's conversation with Loew and Lipson about August 15, 1948 and therefore were prior to the license granted by Silberman to defendant."

XVII.

The District Court erred in finding that Silberman was not the sole inventor of the device of the claims in issue of his Patent No. 2,437,793 and it was at least in part the work of Havekost.

XVIII.

The District Court erred in finding that the conference in Los Angeles between plaintiff and the local zipper manufacturers in that city in 1949 was held in an attempt by plaintiff to maintain price control and evidenced an intent to misuse plaintiff's patents and to violate the antitrust laws.

XIX.

The District Court erred in finding that the

license agreements entered into by plaintiff produced the net result that the product of plaintiff's licensees was curtailed.

XX.

The District Court erred in finding that the contract, Exhibit 7, clearly ties in unpatented with patented art when the licensee exceeded its quota of production provided for.

XXI.

The District Court erred in entering Finding No. XXXIX reading as follows:

"The activities of plaintiff in which numerous suits were filed and settled without trial upon the grant of quota licenses which amounted to a scheme to restrict the production of competitors are apparent, and typical of these activities was plaintiff's commencement of the present action after McKee, an official of plaintiff, had found no infringement and plaintiff apparently made no further inspection or investigation."

XXII.

The District Court erred in entering Finding No. XXXX reading as follows:

"Plaintiff intended and attempted to monopolize a substantial part of the zipper market, has misused its patents and has unclean hands."

XXIII.

The District Court erred in finding that plaintiff's acts in connection with the restricted licenses must necessarily have created a substantial impact

on the supply of zippers in interstate commerce in the United States and there was public injury.

XXIV.

The District Court erred in entering Finding No. XXXXIII reading as follows:

“Plaintiff’s conduct is convincing that it considered the validity of Poux ’017 and Silberman ’793 as being questionable and had not heretofore permitted their adjudication.”

XXV.

The District Court erred in entering Finding No. XXXXV reading as follows:

“The action was brought by plaintiff in bad faith and without reasonable belief in the validity of the patents and the litigation proves harassment and misconduct on plaintiff’s part.”

XXVI.

The District Court erred in entering Finding No. XXXXVI reading as follows:

“Plaintiff, under the pretext of examining defendant’s machinery to determine possible patent infringement of which it had no actual knowledge, secured consent to examine defendant’s machinery only for the purpose of determining whether infringement existed, and while under color of such an examination learned of a number of improvements which defendant had made upon zipper machinery and copied defendant’s improvements in plaintiff’s machinery, Exhibit 5, without compensation to defendant. These improvements by defendant are those listed in Finding XII.”

XXVII.

The District Court erred in entering Finding No. XXXXVIII reading as follows:

“Having considered the acts of plaintiff leading up to the prosecution of this action against defendant and the fact that plaintiff has acted in bad faith and with unclean hands and has misused its patents, defendant is entitled to reasonable attorneys’ fees. Taking into consideration the nature and complexity of the case; the length of the trial; the depositions taken; the experience, standing and eminence of counsel; the quality of skill demonstrated; the importance of the case to the plaintiff and defendant; the risk of the client and responsibility of the counsel; the time fairly and properly expended in preparation out of court; time in court; and the results accomplished, it is found that the reasonable value of the services of attorneys for the defendant is Twenty Thousand Dollars (\$20,000.00).

“In considering the relative importance of the work done by defendant’s attorneys with regard to violation of the antitrust laws, while it was done in part in support of defendant’s counterclaim, it was also done as part of the work showing the defense of unclean hands and the material regarding anti-trust violations was used as a shield in defense of the patent suit as well as a sword in connection with the counterclaim. It was nearly all pertinent to the defense to plaintiff’s action, even though the counterclaim failed.

"It is found that the antitrust problem is the only substantial issue if an appeal is taken. To provide for the contingency, that on appeal the reviewing court should find no violation of antitrust laws and be confronted with an apportionment of fees, and a remand for the purpose of fixing of fees without regard to services rendered on the antitrust violation, then, excluding the services regarding antitrust violations; the reasonable value of attorneys' fees for defendant is Eighteen Thousand and Five Hundred Dollars (\$18,500.00)."

XXVIII.

The District Court erred in concluding that Poux Patent No. 2,078,017 and claims 1 through 4, 16 and 17 thereof is invalid as being anticipated by the prior art and because it did not teach a workable method.

XXIX.

The District Court erred in concluding that Silberman Patent No. 2,437,793 is invalid in view of the prior art as being an aggregation and not a patentable combination bringing about a new result and plaintiff's proofs failed on the issue that the machine of Silberman '793 ever operated.

XXX.

The District Court erred in concluding that the understanding between Silberman and defendant on or about August 15, 1948, was relied upon by defendant which changed its position in reliance thereon and defendant was therefore licensed under Silberman '793.

XXXI.

The District Court erred in concluding that plaintiff purchased Silberman '793 subject to the existing licenses from Silberman to defendant and was estopped from thereafter withdrawing the license or charging that the defendant infringed.

XXXII.

The District Court erred in concluding that Silberman was not the sole inventor of his patent in suit.

XXXIII.

The District Court erred in concluding that Poux '017 is invalid on its face as not teaching a method but an end result.

XXXIV.

The District Court erred in concluding that reliance by defendant upon Silberman's statement that he would not sue defendant for infringement under his patent '793 if defendant refrained from selling machines in certain export markets and plaintiff's officer McKee's report to plaintiff which failed to indicate infringement and McKee's statement to Loew, former president of defendant, that there was no infringement, and defendant's reliance thereon which included expansion of defendant's facilities created an estoppel against plaintiff to subsequently assert infringement and constituted a waiver by plaintiff of a right to sue.

XXXV.

The District Court erred in concluding that by reason of the license agreements entered into be-

tween plaintiff and a number of other competing companies, and by further reason of conduct of plaintiff, plaintiff was guilty of misuse of its patents, bad faith, unclean hands and violation of the antitrust laws. Therefore, plaintiff is not entitled to maintain this action even if the patents in suit were valid and/or infringed.

XXXVI.

The District Court erred in concluding that plaintiff's contracts between it and competing companies and its attempts to control prices in the Los Angeles area accompanied by a threat of a price war if prices were not controlled, constitute a violation of the antitrust laws.

XXXVII.

The District Court erred in concluding that the production restricting contracts entered into between plaintiff and its competitors, the circumstances under which many of those contracts were made, the attempt to control prices in the Los Angeles area, the introduction of a cheaper and inferior brand of zipper in the Los Angeles area subsequent to the attempt to control prices there, the appropriation by plaintiff of improvements made by defendant on its machines under the guise of an infringement investigation, and the purchase of the Silberman patent '793 shortly prior to suit against defendant and the subsequent filing of said suit all constitute steps in a deliberate scheme to control zipper production in the Los Angeles area and throughout the United States.

XXXVIII.

The District Court erred in concluding that plaintiff was guilty of bad faith amounting to fraud in securing consent to inspect defendant's machinery for possible patent infringement and in utilizing such inspection to gain from defendant numerous improvements in zipper machinery which were incorporated in plaintiff's machines without compensation to defendant.

XXXIX.

The District Court erred in concluding that plaintiff through its license agreements with competitors compelled the payment of royalties on unpatented materials and therefore misused its patents in violation of the antitrust laws.

XXXX.

The District Court erred in concluding that the antitrust laws may be used as a shield as well as a sword and are available in this case as a complete defense against infringement and the validity of the patents.

XXXXI.

The District Court erred in concluding that as a matter of law the patents in suit have been misused.

XXX XII.

The District Court erred in concluding that the acts of plaintiff in misuse of its patents and in violation of the antitrust laws substantially affected interstate commerce in zippers and the public was injured.

XXXXIII.

The District Court erred in concluding that in view of the conduct of plaintiff in connection with events leading up to and the bringing of this suit, as set forth in the findings of fact, it is held that defendant is entitled to an award of attorneys fees in the amount of Twenty Thousand (\$20,000.00) Dollars. In the event that on appeal the reviewing court should find no violation of the antitrust laws and be confronted with an apportionment of fees, and a remand for the purpose of fixing such fees without regard to services rendered on the anti-trust violation, it is found that, excluding services regarding antitrust laws violations, the reasonable value of attorneys fees for defendant is Eighteen Thousand Five Hundred (\$18,500.00) Dollars.

XXXXIV.

The District Court erred in failing to conclude that prior to the trial of this action, plaintiff had purged itself of any possible illegal conduct under the antitrust laws and had thoroughly cleansed its hands.

Dated at Los Angeles, California, this 18th day of September, 1957.

LYON & LYON,

/s/ By CHARLES G. LYON,

Attorneys for Plaintiff-

Appellant.

Affidavit of Service Attached.

[Endorsed]: Filed Sept. 19, 1957. Paul P. O'Brien, Clerk.

[Title of Court of Appeals and Cause.]

DESIGNATION OF RECORD

Comes now the appellant, Talon, Inc., and pursuant to Rule 17(6) of this Court designates as the record upon appeal the entire transcript of record as certified by the Clerk of the District Court for the Southern District of California, including specifically:

Complaint filed 10/17/49

Interrogatories propounded to Defendant Under Rule 33 FRCP filed 11/21/50

Amended Answer and Counterclaim filed 4/19/51

Reply to Counterclaim (plaintiff) filed 5/5/51

Defendant's Answer to Plaintiff's Interrogatories filed 5/10/51

Further Interrogatories Propounded to Defendant under Rule 33 FRCP filed 7/26/51

Defendant's Answer to Plaintiff's Interrogatories filed 3/3/52

Interrogatories Propounded to Plaintiff Under Rule 33 FRCP filed 3/28/52

Plaintiff's Answers to Interrogatories Propounded by Defendant and Served March 18, 1952—filed 5/8/52

Plaintiff's Answer to Interrogatory No. 83 in Interrogatories Propounded by Defendant and served March 18, 1952—filed 5/8/52

Minute Order (copy) dated 11/24/52

Further Interrogatories Propounded to Plaintiff filed 12/11/52

Plaintiff's Answers to Interrogatories Pro-

pounded by Defendant and Served December 10, 1952—filed 2/19/53

Pretrial Stipulation and Order filed 3/30/53

Handwritten list of exhibits and witnesses

Amendment to Reply to Defendant's Counterclaim filed 3/8, 55

Amendment to Defendant's Amended Answer and Counterclaim filed 3/15/55

Memorandum to Counsel filed 7/17/56

Minute Order (copy) dated 7/17/56

Memo to Counsel re Attorneys Fees filed 8/13/56

Amended Answer filed 10/1/56

Findings of Fact, Conclusions of Law and Judgment

Notice of Appeal

Designation of Record on Appeal

Motion re extension of time in which to file and docket record on appeal

Eleven (11) Volumes of Reporter's Official Transcript of Proceedings had on 3/11, 3/1, 3/2, 3/3, 3/4, 3/8, 3/9, 3/10, 3/15/55; 8/2 and 8/3/56; and 11/26/56

Plaintiff's Exhibits 1 to 22, inclusive

Defendant's Exhibits A to Z, inclusive, AA to AO, inclusive, AQ to AY, inclusive, BB to BZ, inclusive and CA and CB

Depositions of: Philip Lipson, filed 7/18/52, marked as Plf's Exb. 6.; Sigmund Loew, filed 12/15/52, marked as Defendant's Exb. Q, Robert Eisenberg, marked as Defendant's Exhibit AK, Wilbur B. Jager, filed 12/8/52, marked as Defendant's Exhibit AI; Isadore O. Napp, filed 12/10/52,

marked as Defendant's Exhibit AL; C. F. Detweiler, filed 1/8/53, marked as defendant's Exhibit AJ; John T. Havekost, filed 1/17/55, marked as Defendant's Exhibit AM; William Wray, filed 3/1/55, marked as Defendant's Exhibit AN; Isadore Napp, filed 9/27/55, marked as Defendant's Exhibit BR; William U. Hepworth, filed 9/27/55, marked as Defendant's Exhibit BS

Brown envelope containing exhibits to deposition of Philip Lipson, and

This designation.

Dated at Los Angeles, California, this 18th day of September, 1957.

LYON & LYON,

/s/ By CHARLES G. LYON,

Attorneys for Plaintiff-
Appellant.

Affidavit of Service by Mail Attached.

[Endorsed]: Filed Sept. 19, 1957. Paul P. O'Brien, Clerk.

No. 15714

United States
Court of Appeals
for the Ninth Circuit

UNION SLIDE FASTENER, INC.,
Appellant,
vs.
TALON, INC., Appellee.

SUPPLEMENTAL
Transcript of Record

Appeal from the United States District Court for the
Southern District of California,
Central Division

In the United States District Court, Southern
District of California, Central Division

Civil Action No. 10450-C

TALON, INC., Plaintiff,

vs.

UNION SLIDE FASTENER, INC.,
Defendant.

NOTICE OF MOTION FOR NEW
TRIAL ON COUNTERCLAIM

To: Lyon & Lyon, Attorney for Plaintiff;

Please Take Notice that on the 12th day of August, 1957, at the hour of 10:00 a.m., or as soon thereafter as the matter can be heard, defendant will move the Honorable James M. Carter, in courtroom No. 10, Federal Building, Los Angeles, California, for an order vacating the judgment for plaintiff upon defendant's counterclaim, for an order granting a new trial to defendant on said counterclaim, and for such other orders as may be meet and just.

This motion will be based upon the files, records and transcript of testimony taken in this action and upon the grounds set forth in defendant's Basis For Motion For Rehearing on Counterclaim filed herewith.

Dated: June 7, 1957.

/s/ ALLAN D. MOCKABEE,
Attorney for Defendant. [2]

[Title of District Court and Cause.]

MOTION FOR NEW TRIAL

Defendant moves that the judgment entered herein on defendant's counterclaim be vacated and set aside and that a new trial be granted on the grounds set forth in the accompanying Basis For Motion For Rehearing on Counterclaim.

Dated: June 7, 1957.

/s/ ALLAN D. MOCKABEE,
Attorney for Defendant. [3]

[Title of District Court and Cause.]

BASIS FOR MOTION FOR REHEARING ON COUNTERCLAIM

The foregoing motion is made for the following reasons:

On the last day of the trial of this case, March 15, 1955, defendant, in support of its Counterclaim, was permitted to offer some proof on the subject of attorneys' fees and expenses incurred in the action, to show damage resulting to defendant from plaintiff's violations of the anti-trust laws. Defendant was also given the opportunity to present some evidence of the hardship and expense caused by the suit. But when defendant offered evidence tending to show a loss of profits, an objection by plaintiff was sustained. The Court said at Page 1104 of the record:

“There is no causal connection shown, nor can any be shown, between what the loss is on the books for each fiscal year and any activities of the plaintiff in this action. Nor is the estimated earnings any more than a mere estimate * * * which doesn't take into account competition * * * and such things as the introduction of the Wilzip zipper * * *.”

At this point, plaintiff's counsel interjected (R-1105):

“I think the burden is on the defendant”;

and, apparently, the Court accepted that argument, because the Court [4] then rejected the request of defendant's counsel to present some law on the subject, saying:

“No, I am not going to permit you to do that. I have taken some proof on attorneys' fees and expenses, and time. These other matters are pure speculation. It is highly speculative. From the facts of this case I can't see how loss would be sustained by defendant by virtue of quota agreements entered into with other manufacturers.

“This man never was subject to a quota agreement.”

It is respectfully submitted, on the basis of decisions of the Supreme Court of the United States in anti-trust cases, which will be cited in an accompanying brief, that the Court misconceived the

rules applicable to a case of this kind, and erred in the following respects:

1. In holding that the defendant had the burden of proof to show exact damages;

2. In ruling out evidence tending to show loss of earnings; and

3. In failing to give proper weight to the evidence in the case tending to establish the fact of damage to defendant and the fact that such damage occurred only because of plaintiff's actions.

Taking these points in inverse order, it appears that the Court's belief that there was no causal connection between plaintiff's action and defendant's injury, was grounded on the premise that defendant could lose nothing as the result of quota control agreements imposed on others, and that defendant, indeed, benefitted to a certain extent by the restrictions thereby imposed on other competitors.

It is respectfully submitted that the Court's reasoning on this subject would be flawless, if the defendant Union had actually been allowed to compete freely.

It is true that the quota control agreements did no direct damage to defendant. It is true that the suits against [5] other competitors of Talon likewise did no injury to defendant. It might also be argued that the "price control" meeting in the Los Angeles office of Talon on September 27, 1949, did no more damage to defendant than to other competitors, and that the public was the primary victim.

However, all of these actions by Talon, from the date of the American Agreement (Ex. A.H.) down

to the Los Angeles meeting at which Talon attempted to maintain price control have been held by the Court to be evidence of a continuing attempt to control competition sufficient to fix upon Talon guilt of violation of the anti-trust laws.

Up to this point, it is possible for defendant to agree with the Court's opinion that there was no clear causal connection between Talon's acts and any damages suffered by defendant.

But, Talon's interference with competition, in pursuit of its attempt to control the high-speed zipper machinery industry, was not limited to the quota agreements, the price control meeting or the unprosecuted infringement suits against other competitors. Defendant stood in the way of the success of the plan and so was singled out for special attention and special interference. First, McKee obtained permission to see Union's plant. The report of his inspection to Talon gave no intimation that Union infringed. Then Talon proceeded to take the following steps:

1. Talon appropriated to its own use, without the consent of defendant, and without compensation to defendant, the improvements made by defendant on its machines, and observed by McKee on the occasion of his visit. These improvements were found on plaintiff's Exhibit 5. [6]

2. Talon first took an option on, and then purchased Silberman 793.

3. Talon brought suit against Union without making any inspection by a qualified engineer to determine whether or not Union was infringing,

and presented to the Court as an Exhibit of the machine of the Silberman patent a machine containing the improvements made by defendant.

All of these steps were part and parcel of Talon's attempt to control competition in violation of the anti-trust laws. They were not directed against all competitors. The sole target was Union. Union had succeeded, as the result of Lipson's ingenuity, in securing a competitive advantage by locating the "bugs" in high speed zipper machinery and by devising improvements which remedied them. Talon lifted the improvements and blithely put them to its own use, and then attempted to pawn them off as part of the structure of Silberman '793. Not content with simple commercial piracy designed to destroy Union's competitive advantage, Talon, in pursuit of its plan to restrain competition, acquired Silberman '793, adapted Union's improvements to the structure of that patent, and ruthlessly turned on its inadvertent benefactor by bringing an infringement suit against Union under Silberman '793, without any investigation by a qualified person to determine whether Union was infringing.

Clearly, the steps were taken to eliminate Union's competition, and clearly they were not isolated moves, unconnected with Talon's prior actions which have been found by the Court to be violative of the Anti-Trust laws. The purpose was not to slow down Union's competition—the object was to exterminate it. The [7] weapons used were more vicious, more costly to defendant, and better designed to throttle the competition offered by Union

than any of the iniquitous quota control agreements condemned by the Court. The weapons were employed directly against Union and against no other competitor, and forged the links in the chain connecting Talon's violations of the anti-trust laws with the impact of the infringement suit upon Union, and its consequent damages.

It may be that Union's production was not directly restricted by these steps because it was not held to any quota and was not required to pay royalties. However, the effect was demonstrably greater, because defendant lost the competitive advantage it had secured by removing the "bugs" in zipper manufacturing machinery, before it had even a chance to launch itself in business; and, at the outset of its business career was compelled to use a substantial part of its resources to fight a litigation designed to "nip in the bud" its competition, and to put it out of business. Accordingly, there was an indirect but obvious and substantial interference with its production of zippers and the sale of its products.

The fact of damage to defendant is self-evident:

A. From the loss of its competitive advantage, and

B. From the very existence of the law suit and the expenses incurred in that connection.

It is a matter of record in this Court that defendant went through a reorganization proceeding under Chapter 11 of the Bankruptcy Act while the litigation was pending. It does not require conjecture or speculation, therefore, to determine whether

[8] the actions of plaintiff caused damage to defendant. Damage there certainly was, at the very least, in the form of litigation expenses, and those damages were proved with reasonable certainty. The only uncertainty was in the exact amount of other damages sustained by Union.

With respect to the other damages, defendant was improperly denied the right to offer evidence of estimated loss of profits, on the ground that an estimate would not take into account competition and other factors which might have had a bearing on such loss. On this subject, the Court erroneously sustained plaintiff's objection that defendant had the burden to rule out any other cause for its loss of profits.

In the light of the authorities referred to in the brief submitted herewith and the evidence adduced at the trial, it appears that defendant should have been permitted to offer such proof as it could, to show loss of earnings. It was not proper to require defendant to show with any greater certainty, with the means available to it, the exact amount of its damages. Defendant should have been allowed to offer such proof as it could regarding loss of profits.

In addition to the proof attempted to be offered at the trial, defendant also wishes to offer proof that plaintiff's lawsuit seriously injured its credit standing and resulted in defendant being forced to enter into a bankruptcy reorganization proceeding. This, and other matters will be dealt with in the affidavit of Philip Lipson submitted herewith.

The fundamental fact of damage having been es-

established, it is respectfully submitted that the Court should direct a rehearing on the counterclaim herein, and permit further proof of damages, under the provisions of Rule 59 (a) F.R.C.P.; and that it should then assess an amount which, in its opinion, would be fair and reasonable compensation to defendant, which amount should [9] be trebled.

Respectfully submitted,

ALLAN D. MOCKABEE,
/s/ ALLAN D. MOCKABEE,
Attorney for Defendant. [10]

[Title of District Court and Cause.]

AFFIDAVIT OF PHILIP LIPSON

State of California,
County of Los Angeles—ss.

Philip Lipson, being duly sworn, deposes and says:

I am president of the defendant and make this affidavit in support of defendant's motion for a re-hearing on the defendant's counterclaim.

For more than two years prior to the institution of this action, defendant had concentrated upon the designing and development of machines and methods for the mass production of zippers, the building of such machines, and a campaign to sell the same. Defendant was organized for that purpose. The actual production of zippers, during this period, was incidental only to test runs of machines. Although there was little tangible profit during this

period, defendant had accumulated an intangible profit of an estimated \$30,000 in a research and development reserve. [11]

Prior to March, 1949 defendant had built fifteen zipper chain production machines for sale to other manufacturers as well as for its own use and embarked on a campaign to sell machines to the trade.

From March to August of 1949, after deponent returned from Europe where he had an opportunity to observe the operation of defendant's machines, defendant devoted all of its time to improving the machines and in August 1949 introduced to the trade an improved line of machines producing a better grade of zipper, and defendant started building six additional zipper-chain machines. During the period from the middle of August to October 2, 1949, defendant received bona fide offers for more than 400,000 zippers, amounting to about \$30,000.00, the largest order for 300,000 zippers having come from a Far Eastern exporter who claimed to have switched from plaintiff's line of zippers to defendant's.

Before this suit forced defendant to abandon his plans for selling machines, defendant sold thirteen chain-zipper machines and various auxiliary machines for a total price of \$105,000.00, on which defendant realized a net profit of about \$40,000.00. After plaintiff's action was commenced, defendant could no longer continue to negotiate for the sale of machinery without disclosing to prospective buyers that they might become involved in litigation. As a result, defendant neither manufactured nor

ould any more machines although some buyers offered to take the existing machines if defendant could agree that the sales price be placed in escrow to insure them against infringement suits by Talon. Consequently, defendant's substantial investment in machine tools for use in constructing chain machines was immobilized. Accordingly, as a direct result of the infringement suit defendant was deprived of potential profits in excess of \$100,000.00 in the sale of additional zipper-chain production machines plus auxiliary machinery and equipment; and the opportunity then present to sell machines at a profit has [12] been irretrievably lost. Thus, defendant sustained damages due to the unjustified suit brought by Talon which are clearly demonstrable and measureable.

On September 30, 1949, the Talon "price control" meeting was held. Two days later defendant's factory was burglarized and set afire by persons unknown. The only items other than petty cash and stamps taken by the burglars were drawings and blue prints of the new designs and improvements in defendant's machines. The older blueprints were left undisturbed as were expensive toolings. Eighteen days after the "price control" meeting and fifteen days after the burglary this suit was started.

As a result of the foregoing incidents, defendant's business was immobilized and orders on hand for zippers could be filled only partially with what defendant was able to salvage of zippers in process, and then only to the local trade. Defendant's ability to restore its plant to productive use after the fire

was retarded by the existence of this suit because he could not borrow from banks to make immediate repairs but was forced to wait for an insurance adjustment.

During the period from 1949 to 1955 defendant advertised for a partner or investor to invest additional capital for expansion of its business. Defendant was contacted by several prospective investors who were discouraged because of the Talon litigation and the lack of sufficient profits, the later resulting from expenditures required in the defense of the suit.

Being unable to sell machines or to attract additional capital because of the suit brought by plaintiff, defendant was forced to solicit defense work in order to utilize the facilities of his plant. He succeeded in securing sub-contracts for close tolerance work on small production runs for parts and sub-assemblies for guided missiles. Approximately 75% of this work was on sub-contracts from Hughes Aircraft Corporation of Inglewood, California. [13]

In order to expedite this work, and at the suggestion of the Hughes Corporation, defendant formulated a plan for modest expansion at a cost of \$35,000.00, and after having had applications for bank loans rejected, applied to the Small Loans Division of R. F. C.

In this application, defendant disclosed the pendency of the Talon suit. Defendant was informed in April, 1951, that its application had been approved, but certain stipulations in the loan and mortgage agreement requested by the R. F. C. were deemed

impractical and costly. Defendant then proposed an amended plan calling for a smaller loan, after conferences with R. F. C. officials.

During the course of these negotiations, defendant had an opportunity to purchase machine tools and toolings from California Slide Fastener Corp., a Los Angeles concern which was about to liquidate and which was then negotiating to sell its assets with, among others, a former associate of David Silberman. Having assisted this concern to improve its machines and production methods, defendant sought and obtained permission from the Los Angeles office of R. F. C. to purchase these machine tools and toolings instead of the machine tools specified in the loan application on the strength of the belief, subscribed to by the local R. F. C. representative, that the loan, having been approved, was about 99% sure to be made. These machine tools and toolings were then purchased by defendant, on a temporary installment basis, pending the disbursement of the R. F. C. loan.

Thereafter, in June of 1952, defendant was notified that its amended plan for an R. F. C. loan had been approved by the Washington office of R. F. C. and defendant was requested to prepare all necessary documents, subordinations, etc. These documents, including a mortgage, were prepared, signed and submitted to R. F. C. in July, 1952.

The fact of the loan and the execution of a mortgage by [14] defendant were published by R. F. C.: and in August 1952, Mr. Sharpe, of the Los Angeles office of R. F. C., assured defendant that the

vouchers for the loan had been prepared and were ready for signature and disbursement.

But, apparently, somebody interested in causing trouble for defendant had taken note of the publication of the loan, and odd things began to happen. In September, two auditors of R. F. C. visited defendant's plant and went over defendant's books and records. In the purchases and expenditures of over \$35,000.00, they found a slight error of \$3.75. They then advised that a new profit and loss statement within thirty days of the date of the disbursement of the loan would be required.

After the new statement had been submitted, defendant was advised that, because Mr. Lipson's son-in-law, who is a C.P.A., had assisted in completing the statement because defendant's regular accountant was on vacation, defendant's books would have to be re-audited for a period 13 months past and a physical inventory taken by an independent auditing firm. Defendant reluctantly agreed, even though it had no assurance that the loan would come through, and that the additional expense of about \$1,000.00 would be justified.

At the same time defendant, becoming suspicious of the difficulties with R. F. C., arising as they did after the loan had been approved, and while defendant was waiting for the disbursement of the proceeds, wrote to Hon. Norris L. Poulson, then Congressman from Los Angeles, soliciting his assistance in clearing up the situation.

When the re-audit had been completed, it substantiated defendant's statement to the R. F. C.

within a fraction of a percent regarding the ratio of assets to liabilities. Further demands were made by R. F. C. requiring extensions on certain debts contracted for inventory purchases and subordinations on other loans made during [15] the interim to meet installment payments on the machine tools and toolings purchased from California Slide Fastener Corp. Defendant satisfied these demands.

On February 12, 1953, defendant was advised that the approval of his loan had been revoked. No reason was stated by R. F. C. but the following day defendant received from Congressman Poulson a copy of a letter to him from the Small Loans Division of R. F. C., copy of which together with copy of certification thereof by R. F. C. is attached hereto and marked Exhibit A.

As appears from that letter, the existence of the Talon suit, and the then imminence of the trial of that suit on April 21, 1953, plus the possibility that damages might be awarded against defendant, were the key reasons for the revocation of the loan. With respect to the reason given, in addition, that the loan was not justified from the credit standpoint, obviously, when defendant with the knowledge and permission of R. F. C., incurred what it thought would be a temporary debt to purchase machine tools and toolings from California Slide Fastener Corp., its credit picture naturally underwent a change. That situation would have been rectified immediately upon the granting of the loan, because the loan proceeds were intended to pay for those items.

It thus appears that the suit by Talon, although disclosed by defendant when it first filed its application, and although it did not affect the original granting of the loan, was the real basis for revocation and that the other reasons given were mere "window dressing."

As a result of the revocation of the R. F. C. loan, defendant found itself in a precarious financial position and was forced to ask for relief under Chapter 11 of the Bankruptcy Act. For the next three years, defendant incurred expenses of \$3,000.00 per year to factor its accounts, plus legal expenses connected with the reorganization of \$3,000.00. [16]

Defendant does not know that Talon had anything to do with the revocation of its R. F. C. loan, apart from the fact that its pending infringement suit was cited as a principal reason for such revocation. However, defendant submits that it should have the opportunity to offer the evidence it has on this matter and to examine the records of R. F. C. pertaining to its application to find out whether there was something irregular in the handling of the transaction by R. F. C. The chain of events preceding the revocation was most unusual, and what happened subsequently gives further reason for believing that Talon was the motivating force behind defendant's difficulties which started when the suit was filed and thereafter multiplied almost geometrically.

After the defendant went into reorganization, the American Credit Insurance Company acted as representative of several major Group A creditors. The

local manager of that company informed defendant that it knew a prospective buyer of defendant's business whom defendant then contacted. The man your deponent met was a Mr. Cargill who stated that he represented an undisclosed principal. Mr. Cargill stated that he was unworried about the Talon suit because his client had contacts with Talon officials, and could probably effect a satisfactory settlement. After the first conference, deponent met Mr. Cargill again and was advised by him that his client had assurances from Talon that a satisfactory disposition of the suit could be arranged. He made a proposal to bail defendant out of its difficulties by making a composition with Class A creditors involving a lump sum cash payment of \$23,000.00, and by issuing to Class B creditors, excluding deponent and members of his family and friends who had claims for monies loaned, preferred stock in a new corporation to be organized by his client. Defendant's Board of Directors declined the offer, and defendant, with the aid of Class B creditors, successfully resisted pressure by the Class A creditors to force the acceptance of Mr. Cargill's offer. If the offer had [17] been accepted, the stockholders of defendant would have received nothing.

Even during the trial of this action, some members of the garment trade were propagandized to confine their purchases of zippers to a selected group of manufacturers excluding defendant. Annexed hereto as Exhibit B is a copy of a communication emanating from the New York office of J. C. Penney Company which came to defendant's

attention. It will be noted that the "approved" list names Talon and its cross-licensed "second string quarterback," Conmar, plus the "reserves," Crown, Prentice, Scovill, Waldes and Ideal, all of whom are Talon licensees: the group in which the major portion of the zipper business is concentrated.

This affidavit is submitted to the Court to establish the fact of damage to defendant as the result of this suit and other activities which have all but crushed defendant financially.

Apart from the question of whether Talon was responsible for the incidents and activities here related, not all of which have been set forth, it is clear that defendant is in a position to offer concrete evidence of actual money losses sustained by defendant as the direct result of this action, and begs leave of the Court to be granted such opportunity at a rehearing of the counterclaim herein.

It is respectfully submitted that to permit plaintiff to go practically "scot" free, while leaving the object of plaintiff's malice lying prostrate, without compensation for damages which defendant would not have suffered but for Talon's action, would be a substantial denial of justice.

/s/ PHILIP LIPSON.

Subscribed and sworn to before me this 6th day of June, 1957.

[Seal] /s/ HELEN WEIGHTMAN,
Notary Public. My Commission Expires March 6,
1960. [18]

RECONSTRUCTION FINANCE
CORPORATION

Washington

Certificate

I, M. W. Knarr, Secretary of Reconstruction Finance Corporation, a corporation created and existing pursuant to the Reconstruction Finance Corporation Act, approved January 22, 1932 (47 Stat. 5), as amended, do hereby certify that annexed hereto is a true and correct copy of a letter from Harry A. McDonald, Administrator, Reconstruction Finance Corporation, Washington 25, D. C., to Honorable Norris Poulson, House Office Building, Washington 25, D. C., dated February 13, 1953.

In Witness Whereof, I have hereunto set my hand and caused the seal of Reconstruction Finance Corporation to be affixed at Washington, D. C. on this 2nd day of October 1956.

[Seal] /s/ M. W. KNARR,

Secretary, Reconstruction Finance Corporation. [19]

RECONSTRUCTION FINANCE
CORPORATION

Washington 25, D. C.

Feb. 13, 1953

Honorable Norris Poulson
House Office Building
Washington 25, D. C.

Dear Mr. Poulson:

In furtherance of Mr. O'Donnell's telephone con-

versation with Miss Webb of your office, the authorization of a \$34,690 loan to Union Slide Fastener, Inc., Los Angeles, subsequently reduced to \$28,440, has been cancelled.

Since authorizing this loan investigation has disclosed a decidedly unfavorable financial condition. An analysis of a recently completed audit reveals that the statement submitted by this company with its loan application was inaccurate and did not reflect the true financial condition; that the net income is not sufficient to currently retire the monthly installment obligations; that the proposed loan proceeds would not be sufficient to bring borrower's payables into current condition; and an adverse change in the borrower's condition during the period from September 30, 1951 to October 31, 1952.

From a credit standpoint there is no basis whatsoever for an RFC loan and if the patent infringement suit filed by Talon, Inc., against the company, set for trial April 21, 1953, should be successfully prosecuted the applicant's financial condition would probably be untenable.

The enclosures submitted with your letter of February 10, 1953 are herewith returned. In view of all of the unfavorable factors brought to light in connection with this case the RFC had no alternative but to cancel the loan authorization.

Sincerely,

/s/ HARRY A. McDONALD,
Harry A. McDonald,
Administrator. [20]

This is a letter directed personally to you asking your attention to garment zippers. We have a record of constant complaints on certain brands of zippers. Therefore, in line with our policy of quality control, I would like to point out zippers which the J. C. Penney Company laboratory considers acceptable. They are:

Conmar, Crown, Prentice, Scovill, Talon, Waldes, Serval, Ideal (the order in which they are named does not indicate our rating).

We ask that you do not use any other brand of zippers. If you have any doubts about the identity of any other zipper you may have used in the past but not mentioned above, please telephone us.

We would appreciate your acknowledgment of this letter indicating that you have read and understand it. Please comply by filling in and returning the stub at the bottom of this letter.

Very truly yours,

J. C. PENNEY COMPANY, INC.,
/s/ H. T. GRANOIEN, M,
H. T. Granoien.

HTG:m

Date.....

J. C. Penney Company, Inc.
3460 Wilshire Blvd., L. A. 5, Calif.
Attn: H. T. Granoien

We have received, read and understand your letter dated March 3, 1955 regarding zippers acceptable to the J. C. Penney Company laboratory.

Firm
By

[Title of District Court and Cause No. 10450-C.]

MEMORANDUM OF LAW IN SUPPORT OF
MOTION FOR REHEARING ON COUNTERCLAIM

This is a motion by defendant to reopen the trial to permit the production of further evidence in support of defendant's counterclaim, and for a rehearing on the counterclaim.

The basis of the motion is outlined in the motion proper. This brief will be devoted to a discussion of the principles of law involved.

Proof of Damages

It is well settled that in a suit for treble damages under the anti-trust laws, where the evidence produced tends to show the fact of damage, the wrongdoer (the plaintiff in this case) must bear the risk of the uncertainty which his own wrong has created; that the burden of proving exact damages is not on the injured party; and that where damages cannot be proved precisely, the Court may make a reasonable estimate based on relevant data.

Bigelow v. R.K.O. Radio Pictures, 327 U.S. 251.

Story Parchment Co. v. Paterson Co., 282 U.S. 555. [22]

Eastman Kodak Co. v. Southern Photo Co., 273 U.S. 359.

In the *Bigelow* case, plaintiff sued for treble damages under the Sherman and Clayton Acts, based on an unlawful conspiracy preventing plaintiff from securing first-run motion pictures.

Plaintiff offered proof of damages in the alternative. One line of proof was directed to loss of earnings representing the difference between earnings of a competitor theatre of comparable size and plaintiff's theatre, after the conspiracy became effective. The other line attempted to make a comparison between plaintiff's receipts from its theatre during the five year period after the institution of the conspiracy, and plaintiff's earnings for the four preceding years.

The Circuit Court of Appeals had held that the proof offered did not furnish a proper measure of damages. It said that the proof did not take into account many other factors which might have affected the earnings of the plaintiff during the five year period following the conspiracy, in the absence of the illegal distribution of film.

The Supreme Court held that the evidence produced tended to show damage, and that it was proper for the jury to assess the amount thought proper to compensate plaintiff.

The court said:

"The constant tendency of the courts is to find some way in which damages can be awarded where a wrong has been done. Difficulty of ascertainment is no longer confused with right of recovery."

The Court, through Mr. Chief Justice Stone, then referred to the cases of *Story Parchment Co. v. Paterson Co.* (supra) and *Eastman Kodak Co. v. Southern Photo Co.* (supra), both of which were actions to recover treble damages for violations of

the anti-trust laws, and both of which involved damages difficult to prove with any degree of certainty. Mr. Justice Stone said at Pages 264 and 265: [23]

“The tortious acts had in each case precluded ascertainment of the damages more precisely. * * * Nevertheless, we held that the jury could return a verdict for plaintiffs * * *.

“In such a case, even where the defendant by his own wrong has prevented a more precise computation, the jury may not render a verdict based on speculation or guesswork. But the jury may make a just and reasonable estimate of the damage based on relevant data, and render its verdict accordingly. In such circumstances ‘juries are allowed to act upon probable and inferential, as well as direct proof’ (citing the Story and Eastman cases). Any other rule would permit the wrongdoer to profit by his wrongdoing at the expense of his victim. It would be an inducement to make wrongdoing so effective and complete in every case as to preclude any recovery, by rendering the measure of damages uncertain. Failure to apply it would mean that the more grievous the wrong done, the less likelihood there would be of a recovery.’” (Emphasis supplied.)

The Court then quoted, with approval, the following language in *Story Parchment Co. v. Paterson Co.* (supra):

“The most elementary conceptions of justice and public policy require that the wrongdoer

shall bear the risk of the uncertainty which his own wrong has created. * * * That principle is an ancient one * * * and is not restricted to proof of damages in anti-trust suits, although their character is such as frequently to call for its application." (Emphasis supplied.)

The identical principles have been recognized and applied in the State and Federal Courts in California. [24]

Learned v. Castle, 78 Cal. 454 at 461.

Hanlon Drydock v. Southern Pacific, 92 Cal. App. 230.

Permanente Metals Corp. v. Pista, 154 Fed. 2nd 568 (C.C.A. 9th).

These principles should be applied in the case at bar. The evidence spells out, with certainty, the fact of damage. Surely, the defendant would not have incurred the expenses of this lawsuit if Talon had not attempted to use this Court to assist it in carrying out its plan to restrain competition by stamping out the competition which Union had just placed itself in a position to offer. Just as certainly, the appropriation by Talon of improvements made by defendant to high-speed zipper machinery and the attempt by Talon to graft those improvements on the machine of Silberman '793 to justify its infringement suit against defendant, resulted in the loss of a competitive advantage with which defendant started its business, and imposed on defendant burdens which did not exist until Talon instituted its campaign against Union. The wrongdoing of

Talon has been established; and its wrongful acts constituted but another phase of its plan to restrain competition. The primary victim was Union. Because Union had no previous business record, it found itself in a difficult position to prove its damages with mathematical certainty, but offered the best proof available to it, and would have offered more, if permitted to do so.

Under the circumstances, Union should have the opportunity to supply to the Court whatever relevant data it can produce to enable the Court to make a just and reasonable determination of the amount it is entitled to as compensation.

Causal Connection

In the Court's memorandum to counsel deciding the various issues in this case, the Court said:

"We also believe that *Kobe, Inc. v. Dempsey Pump Co.* [25] (10 Cir. 1952) 198 F. 2nd 416, cert. den. 344 & S. 837, has many features similar in our case and is, at least, persuasive."

The chief similarities were the following:

1. Kobe had, prior to its action against Dempsey, committed violations of the anti-trust laws.
2. When the Dempsey pump was placed on the market, Kobe decided to "do something about it"; and the President of Kobe attended a public demonstration of the Dempsey pump.
3. When Dempsey denied infringement of the Kobe patents, Kobe brought an infringement suit against Dempsey without "concrete information that the Dempsey pump infringed any of Kobe's patents."

On the basis of these findings the Court held that the lawsuit was no more than a part of the original plan to corner the hydraulic pump business for oil wells, "designed to nip this competitive threat in the bud." (Page 424.)

Plaintiff's argument that there is no connection between its past actions, which have been found by the Court to be illegal, and the lawsuit against defendant, because plaintiff's only adverse action against the defendant as the filing of this lawsuit, ignores the fact that the lawsuit was simply another weapon added to its arsenal of equipment for use in restricting competition. In the Kobe case, Kobe had not taken any action against the interests of Dempsey other than the filing of the infringement suit, and the Court there held that the lawsuit was related to Kobe's monopolistic scheme.

The Kobe case was, in fact, weaker on the point of causal connection between Kobe's violations of the anti-trust laws and the injury to Dempsey, because Kobe, unlike Talon, had not set up a pattern of quota control agreements. Kobe had merely acquired all available patents, and had suppressed some while using the others for its sole benefit. Yet the Court in the Kobe case had no [26] hesitation in finding that the infringement action against Dempsey, considered in the background of the monopolistic scheme which preceded that suit, was a step taken by Kobe to give effect to the unlawful plan to restrict competition.

It is respectfully submitted, upon the authority of the Kobe case, and on the evidence adduced at

the trial, that the infringement suit against defendant was clearly but another phase of Talon's plan to restrict competition in the high-speed zipper industry. It is also respectfully submitted that the damage sustained by Union included more than the costs of the litigation; and that the losses sustained by Union were due, at least in part, to the bringing of the suit by Talon. As noted at a prior point in this brief, the burden of showing what part of the losses were contributed to by the Talon suit is not on the defendant, because Talon cannot benefit by its own wrongdoing and must assume the risk of uncertainty in fixing defendant's damages.

Respectfully submitted,

ALLAN D. MOCKABEE,
/s/ ALLAN D. MOCKABEE,
Attorney for Defendant. [27]

Affidavit of Service by Mail Attached. [28]

[Endorsed]: Filed June 7, 1957.

[Title of District Court and Cause.]

MEMORANDUM IN OPPOSITION TO
MOTION FOR NEW TRIAL

The defendant has moved for a new trial with respect to its counterclaim for damages under the antitrust laws. Defendant does not allege any newly discovered evidence, and the sole ground for support of the motion appears to be the claim of the

defendant that the court made an error of law in concluding as it did that the defendant has failed to prove injury to its business or property arising out of any of the acts of plaintiff.

Far from making an error of law in this regard, the court was applying well-settled rules to the effect that damages cannot be awarded where the proof fails to show the fact of damage resulting from the acts of the accused complained of. Defendant has produced no evidence of any act of Talon, Inc. which could in any way affect the defendant in its business or property other than [29] the filing of this law suit. The patents herein sued on do not relate to zippers themselves, and hence the existence of this law suit had no effect and could have had no effect upon defendant's sales of zippers. Absent infringement or claimed infringement by the zippers, no one could have had the slightest fear of being involved in infringement by purchasing zippers manufactured by the defendant. As respects the machines for manufacturing the zippers, neither the record in this case nor the showing by defendant in support of this motion shows that any machines were sold prior to institution of suit, much less that the suit caused loss of machine business. At the time of suit, defendant was merely attempting a selling campaign.

Defendant's history is simply that of an unsuccessful business, and nothing by way of evidence, in the record or offered pursuant to this motion, shows its lack of success to have been caused by plaintiff's activities. Rather, that lack of success ap-

pears to have stemmed from other things. Thus, from Mr. Lipson's affidavit, we find that at the inception of this litigation, he had no established business. At about the time the litigation commenced, he suffered a fire and a burglary, was undercapitalized, and his business suffered because he had to await adjustment on his fire insurance.

Relying upon a hoped-for Reconstruction Finance Corporation loan, he overextended in order to get into defense work. The Reconstruction Finance Corporation which originally tentatively approved a loan although it had full knowledge of the instant suit, rejected the loan not simply because of the instant suit but because:

“An analysis of a recently completed audit reveals that the statement submitted by this company with its loan application was inaccurate and did not reflect the true financial condition; that the net income is [30] not sufficient to currently retire the monthly installment obligations; that the proposed loan proceeds would not be sufficient to bring borrower's payables into current condition; and an adverse change in the borrower's condition during the period from September 30, 1951 to October 31, 1952.”

Thus, the fact that defendant's business was unsuccessful and that defendant was forced into a corporate reorganization is not shown to have been caused by the acts of plaintiff. Defendant's own showing demonstrates plainly its inability to establish this causal connection with the certainty de-

manded by the law. Indeed, the showing seems to indicate quite oppositely to defendant's contentions. Witness the letter from J. C. Penney Co., shown in no way to be connected with plaintiff, which only establishes that J. C. Penney Co. considered zippers such as those manufactured by defendant to be inferior.

This case is comparable to the case of Chiplets, Inc. v. June Dairy Products Co. (D.C.D.N.J., 1953) 114 F.S. 129 which was itself a patent infringement action in which the defendant counterclaimed under the antitrust laws. In that case, the court stated:

"The burden is upon the intervenor to prove not only that the license agreements were used by the plaintiff in violation of the Act but also that their use in the course of commerce was the direct and proximate cause of injury to its business. A claim for damages may be sustained only upon proof of these elements. *Story Parchment Co. v. Paterson Parchment Paper Co.*, 282 U. S. 555, 55 S.Ct. 248, 75 L.Ed. 544, et seq., *Kobe, Inc. v. Dempsey Pump Co.*, 10 Cir. 198 F.2d 416, 425, 426; *Turner Glass Corp. v. Hartford-Empire Co.*, 7 Cir., 173 F.2d [31] 49, 51, 52; *Shotkin v. General Electric Co.*, 10 Cir., 171 F.2d 236, 238, 239. There can be no recovery in the absence of such proof."

(Emphasis supplied)

A similar case is *Ronson Patents Corp. v. Sparklets Devices*, (D.C.E.D.Mo., 1953), 112 F.S. 676, which was again a patent infringement action with

a counterclaim for damages for violation of the antitrust laws. In considering the question of damages, the court there held:

“The rule of law on damages is not a matter of dispute. Defendants must prove a pecuniary loss to its business; it must be proven by facts from which their existence is logically and legally inferable. Possibility or conjecture as to the causal connection between the wrong and the injury is insufficient.”

(Emphasis supplied)

It is apparent from defendant's memorandum in support of its motion for rehearing that it is confusing the rule as to the degree of proof required for extent of damage with the rule of law as to the degree of proof required for the fact of damage suffered as a result of the acts complained of. The law does not permit any conjecture or failure of proofs as to the fact of damage and as to the causal relationship between the acts complained of and this damage. While the rule of certainty may be relaxed in establishing the amount of damages after the fact of damages is proved, it is never relaxed as respects proof that the fact of damage should be attributed to another's wrong-doing. As stated in *Story Parchment Company v. Paterson Parchment Paper Co.*, (1930) 282 U. S. 555, 75 L.ed 544 at page 548:

“ * * * It is true that there was uncertainty as to the extent of the damage, but there was none as [32] to the fact of damage; and there is a clear distinc-

tion between the measure of proof necessary to establish the fact that petitioner had sustained some damage, and the measure of proof necessary to enable the jury to fix the amount. * * *

Departure from this rule has never been suggested, and it is the rule followed in *Kobe, Inc. v. Dempsey Pump Co.*, (10 Cir., 1952) 198 F.2d 416, the principal case relied upon by defendant's in this motion. It is exactly at this point that the defendant's proof fails, and the court was quite correct when it said "There is no causal connection shown, nor can any be shown, between what the loss is on the books for each fiscal year and any activities of the plaintiff in this action."

All of the authorities relied upon in defendant's memorandum of law, with the exception of the *Kobe* case, relate to proofs as to the extent of damage. Defendant has not and cannot produce a case, including the *Kobe* case, which permits any weakness in the proofs of legal causation, and it is therefore unnecessary for us to take issue with the statements quoted in defendant's legal memorandum for the simple reason that they apply to the extent of the damages and not to legal causation.

The defendant complains of three things which it states the plaintiff has done which resulted in the damages it seeks. The first of these is alleged appropriation of the improvements Lipson is alleged to have made on the machines. An appropriation of such improvements by plaintiff would not constitute a violation of the antitrust laws, and no causal con-

nection whatsoever has been shown between such alleged appropriation and any damages to defendant.

Defendant next complains of plaintiff's purchase of the Silberman patent. This purchase of the Silberman patent cannot of itself have resulted in any damage to defendant. This brings [33] us to the sole remaining basis for the allegation of damage, the institution of the present law suit. Defendant has been fully compensated for its costs in defending this suit by the award of \$20,000 in attorneys' fees, and we believe it to be clear that the mere institution of the suit without more cannot be the basis for the recovery of damages by the defendant on the theory of the violation of the antitrust laws. Further, even if there were shown conduct accompanying the institution of suit upon which a holding of violation of the antitrust laws could be based, it would have to be established with certainty that that conduct, coupled with institution of the suit, caused the asserted damage. That is the holding in the Kobe case cited by defendant.

The Kobe case involved a complete monopoly of commerce in rodless pumps, Kobe having acquired same over a period of 25 years preceding the suit by various acts and contracts held by the court to have been in violation of the antitrust laws. At no time had Kobe ever granted licenses, and, at the time of its suit against Dempsey, Dempsey was its only competitor. When Dempsey entered the rodless pump business, Kobe began a campaign of harrass-

ment whose only object was the driving of Dempsey from the field. This included verbal notices and the like to Dempsey customers to the effect that Dempsey would be sued; it involved statements by the Kobe management to the effect that no one could build a rodless pump without infringing one of Kobe's patents; it involved institution of the patent infringement suit; and most important it involved the sending by Kobe to all of Dempsey's customers or potential customers implied threats in the form of notices of the suit, the latter being accomplished by the mailing of a circular letter to the purchasing agents of the forty major purchasers of pumping equipment in the central part of the United States. These activities were found by the [34] court to be "disastrous to the defendant" and to have brought the business of Dempsey "almost at a standstill." The court further found that Kobe had succeeded in instituting an industry-wide boycott of Dempsey's products and that the business of Dempsey, an established business when the suit was begun, had been driven to the wall by Kobe and by Kobe alone.

The history of the activities by Kobe constituting its violation of the antitrust laws is not relevant to this motion, it being sufficient to say that Kobe had violated the law. On the issue of damages, however, two points stand out in the court's decision, one having to do with the effect of the mere filing of a suit and the other having to do with the necessity of proving damages with certainty. First, the

court indicated that had there been nothing more than the mere filing of the action, resulting damages could not be recovered. The court stated at page 425:

“We have no doubt that if there was nothing more than the bringing of the infringement action, resulting damages could not be recovered, but that is not the case.”

This is but recognition of the well-established rule set forth in *Virtue v. Creamery Package Co.* (1912), 227 U. S. 8, 57 L.ed 393; *International Visible Systems Corp. v. Remington-Rand, Inc.*, (6 Cir., 1933) 65 F.2d 540; *Straus v. Victor Talking Machine Co.*, (2 Cir., 1924), 297 F. 791, bottomed on the proposition that free and unrestricted access to the courts should not be denied or imperiled.

Unlike the *Kobe* case, there is nothing in the instant case to distinguish our situation from the cases cited above. There is neither proof nor even allegation here that plaintiff has done anything in any way to interfere with defendant's business in the sale of zippers or machines for making [35] zippers; there has been no general campaign to suppress defendant's business; and there has been no approach to customers, verbal or otherwise.

Second, the court in deciding the *Kobe* case gave full effect to the rule referred to above, namely, that although a certain latitude will be permitted in proving extent of damages, the fact of damage and its causal connection with the acts of the plaintiff must be proved with certainty. The court in the

Kobe case found that following the filing of the suit by Kobe and the various notices to the trade, Dempsey's business was brought to a standstill and a virtual industry-wide boycott of the Dempsey pump brought about. This finding was possible because to no other cause could be attributed the destruction of Dempsey's business. Kobe had a monopoly not present in the instant case, so the competitive efforts of others in the field were not a factor. Kobe had instituted a campaign of harrassment directed at Dempsey's customers, an activity absent in the instant suit. Evidence was present that this campaign was indubitably successful. Dempsey had an established business and was selling pumps prior to the boycott campaign and the institution of the suit, and the court was able to measure the business prior to Kobe's activities against the business subsequent to Kobe's activities. No such measure is here available. Finally, there was simply nothing in the record in the Kobe case to which to attribute Dempsey's loss of business other than Kobe's activities. There was not, as here, a robbery and a fire; there was not, as here, undercapitalization; there was not, as here, overextension in order to obtain defense business; there was not, as here, misplaced reliance upon the prospects of an R.F.C. loan; and the court expressly found the Dempsey pump to be a good pump and a satisfactory pump. Reference to the J. C. Penney Co. letter accompanying the instant motion indicates the likely possibility [36] that much of defendant's troubles can simply be attributed to a doubtful product.

Accordingly, it is respectfully submitted that this court was absolutely correct in ruling that there was no causal connection between any of the acts of the plaintiff and the alleged losses of the defendant. It is further urged that even had causal connection between those alleged losses and plaintiff's bringing of the instant suit been shown, damages cannot be predicated on the suit alone. Defendant's motion for a new trial should be denied.

Dated at Los Angeles, California, this 3rd day of July, 1957.

LYON & LYON,

/s/ By CHARLES G. LYON,

Attorneys for Plaintiff. [37]

Acknowledgment of Service Attached. [38]

[Endorsed]: Filed July 3, 1957.

United States District Court, Southern District
of California, Southern Division

No. 10450-Central Civil

TALON

vs.

UNION SLIDE FASTENER.

MINUTES OF THE COURT

Date: August 22, 1957. At: San Diego, California.

Present: Hon. James M. Carter, District Judge.

Deputy Clerk: William W. Luddy. Reporter:
John Swader.

Counsel for Plaintiff: Charles G. Lyon.

Counsel for Defendant: Allan Mockabee.

Proceedings: Hearing defendant's motion for new trial on counter claim.

Attorney Mockabee makes statement in support of said motion for new trial.

Attorney Lyon argues in opposition.

It Is Ordered that defendant's motion for new trial on the counterclaim is denied.

JOHN A. CHILDRESS,

Clerk,

/s/ By WILLIAM W. LUDDY,

Deputy. [39]

[Title of District Court and Cause.]

NOTICE OF APPEAL

To: Talon, Inc., and Lyon & Lyon, McCoy, Greene & TeGrotenhuis, and Ralph E. Meech, its attorneys:

Notice is hereby given that Union Slide Fastener, Inc. hereby appeals to the Court of Appeals for the Ninth Circuit from the judgment entered in this action on August 22, 1957 and particularly to that portion of the judgment designating defendant's counterclaim.

Dated this 23rd day of September, 1957.

/s/ ALLAN D. MOCKABEE,

Attorney for Defendant. [40]

Affidavit of Service by Mail Attached. [41]

[Endorsed]: Filed Sept. 23, 1957.

[Title of District Court and Cause.]

MOTION TO EXTEND TIME TO FILE
RECORD AND DOCKET APPEAL

Comes now the defendant, through its attorneys, and moves this Honorable Court for an order extending the time for the defendant-appellant to file the record and docket its appeal in the Court of Appeals for the Ninth Circuit, the full fifty days until December 20, 1957. This motion is based upon the annexed affidavit of Allan D. Mockabee.

/s/ ALLAN D. MOCKABEE,
Attorney for Defendant-
Appellant.

Approved and so ordered:

/s/ LEON R. YANKWICH,
United States District
Judge. [42]

[Title of District Court and Cause.]

AFFIDAVIT OF ALLAN D. MOCKABEE

State of California,
County of Los Angeles—ss.

Allan D. Mockabee, being first duly sworn, deposes and says:

That in this case there has been an appeal taken by defendant from the judgment against it on its counterclaim.

That one of counsel for defendant is located in

New York City and affiant has his offices in Los Angeles, California.

That William J. Graham, defendant's New York counsel, and affiant have been engaged in litigation in their respective jurisdictions, and affiant will be engaged in litigation requiring his attendance in court in the Southern District of California and in the Eastern District of Illinois during the month of October.

That in order for affiant and defendant's New York counsel to confer with each other and with defendant concerning this appeal it is necessary for counsel to have additional time [43] to properly deal with the matter.

/s/ ALLAN D. MOCKABEE.

Subscribed and sworn to before me this 4th day of October, 1957.

[Seal] /s/ HELEN WEIGHTMAN,
Notary Public in and for said County and State.
My Commission Expires: March 6, 1960. [44]

[Endorsed]: Filed October 4, 1957.

[Title of District Court and Cause.]

DESIGNATION OF RECORD

Comes now the appellee, Union Slide Fastener, Inc., and pursuant to Rule 17(6) of this Court designates as the record upon appeal the entire transcript of record as certified by the Clerk of the District Court for the Southern District of Cali-

fornia, including specifically the following papers not specified in the Designation of the appellant: [46]

Defendant's motion for a rehearing on the counterclaim dated June 7, 1957

Plaintiff's opposition to the motion for a rehearing on the counterclaim dated July 3, 1957

Memorandum of the Court denying motion for a rehearing on the counterclaim dated August 22, 1957

Order of the Court denying motion for rehearing on the counterclaim dated August 22, 1957.

Dated at New York City, New York this 17th day of December, 1957.

ALLAN D. MOCKABEE,
WILLIAM J. GRAHAM,
/s/ By WILLIAM J. GRAHAM,
Attorneys for Defendant-
Appellee. [47]

Affidavit of Mailing Attached. [48]

[Endorsed]: Filed Dec. 19, 1957.

[Title of District Court and Cause.]

CERTIFICATE BY THE CLERK

I, John A. Childress, Clerk of the above-entitled Court, hereby certify that the items listed below constitute the transcript of record on appeal to the United States Court of Appeals for the Ninth Circuit, in the above-entitled case:

No. 15714

United States
Court of Appeals
for the Ninth Circuit

TALON, INC., Appellant,

vs.

UNION SLIDE FASTENER, INC., Appellee.

UNION SLIDE FASTENER, INC., Appellant,

vs.

TALON, INC., Appellee.

Transcript of Record

In Five Volumes

VOLUME V.

Book of Exhibits

Pages 1659 to 2007, inclusive)

Appeal from the United States District Court for the
Southern District of California,
Central Division

Phillips & Von Orden Co., Fourth and Berry Sts., San Francisco, Calif.—3-5-58

FILED

MAR 12 1958

PAUL P. O'BRIEN, CLERK

No. 15714

United States
Court of Appeals
for the Ninth Circuit

TALON, INC.,

Appellant,

vs.

UNION SLIDE FASTENER, INC.,

Appellee.

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Central Division

INDEX

Exhibits for Plaintiff:

1—N. J. Poux Patent No. 2,078,017.....	1659
Admitted in Evidence.....	228
3—D. Silberman Patent No. 2,437,793....	1664
Admitted in Evidence.....	256
13—G. Sundback Patent No. 1,467,015....	1689
Admitted in Evidence.....	482
22—F. Ulrich Patent No. 2,221,740.....	1714
Admitted in Evidence.....	1084

Exhibits for Defendant:

E—G. Sundback Patent No. 1,331,884....	1723
Admitted in Evidence.....	506
F—G. Sundback Patent No. 1,947,956....	1743
Admitted in Evidence.....	510
G—L. W. Smith Patent No. 1,533,352....	1759
Admitted in Evidence.....	511
H—G. Johnson Patent No. 1,731,667.....	1764
Admitted in Evidence.....	514
I—L. Hommel Patent No. 1,659,266....	1769
Admitted in Evidence.....	517
J—E. H. Binns et al. Patent No. 2,026,- 413	1781
Admitted in Evidence.....	518
K—F. R. Taberlet Patent No. 2,294,253..	1835
Admitted in Evidence.....	520

Exhibits for Defendant—(Continued):

L—G. Wintritz Patent No. 2,201,068....	1842
Admitted in Evidence.....	521
M—G. Sundback Patent No. 1,467,015, Same as Plaintiff's No. 13 Set Out at	
Page	1689
Admitted in Evidence.....	522
N—J. A. Murphy Patent No. 1,664,480..	1868
Admitted in Evidence.....	522
O—S. Loew Patent No. 2,444,706.....	1877
Admitted in Evidence.....	523
AM-3—D. Silberman Patent No. 2,437,793, Same as Exhibit 3 Set Out at Page..	1664
Admitted in Evidence.....	1022
BF—G. Sundback Patent No. 1,434,857..	1883
Admitted in Evidence.....	965
BG—G. Wintriss Patent No. 2,336,662...	1906
Admitted in Evidence.....	965
BH—F. Ulrich Patent No. 2,370,380....	1917
Admitted in Evidence.....	966
BI—N. J. Poux Patent No. 2,169,176....	1934
Admitted in Evidence.....	966
BJ—W. A. Behrens Patent No. 2,267,783	1947
Admitted in Evidence.....	967
BT—R. C. Legat Patent No. 2,116,726...	1968
Admitted in Evidence.....	1165
BU—F. Ulrich Patent No. 2,302,075.....	1976
Admitted in Evidence.....	1165

iii.

BV—F. Ulrich Patent No. 2,338,884.....	1988
Admitted in Evidence.....	1165
BW—G. E. Prentice Patent No. 2,116,712	1999
Admitted in Evidence.....	1165
BX (Id.)—J. F. Thayer Patent No. 322,-	
997	2005
Marked for Identification.....	1171

PLAINTIFF'S EXHIBIT No. 1

N. J. Poux Patent No. 2,078,017

Filed Jan. 3, 1931

Patented April 20, 1937

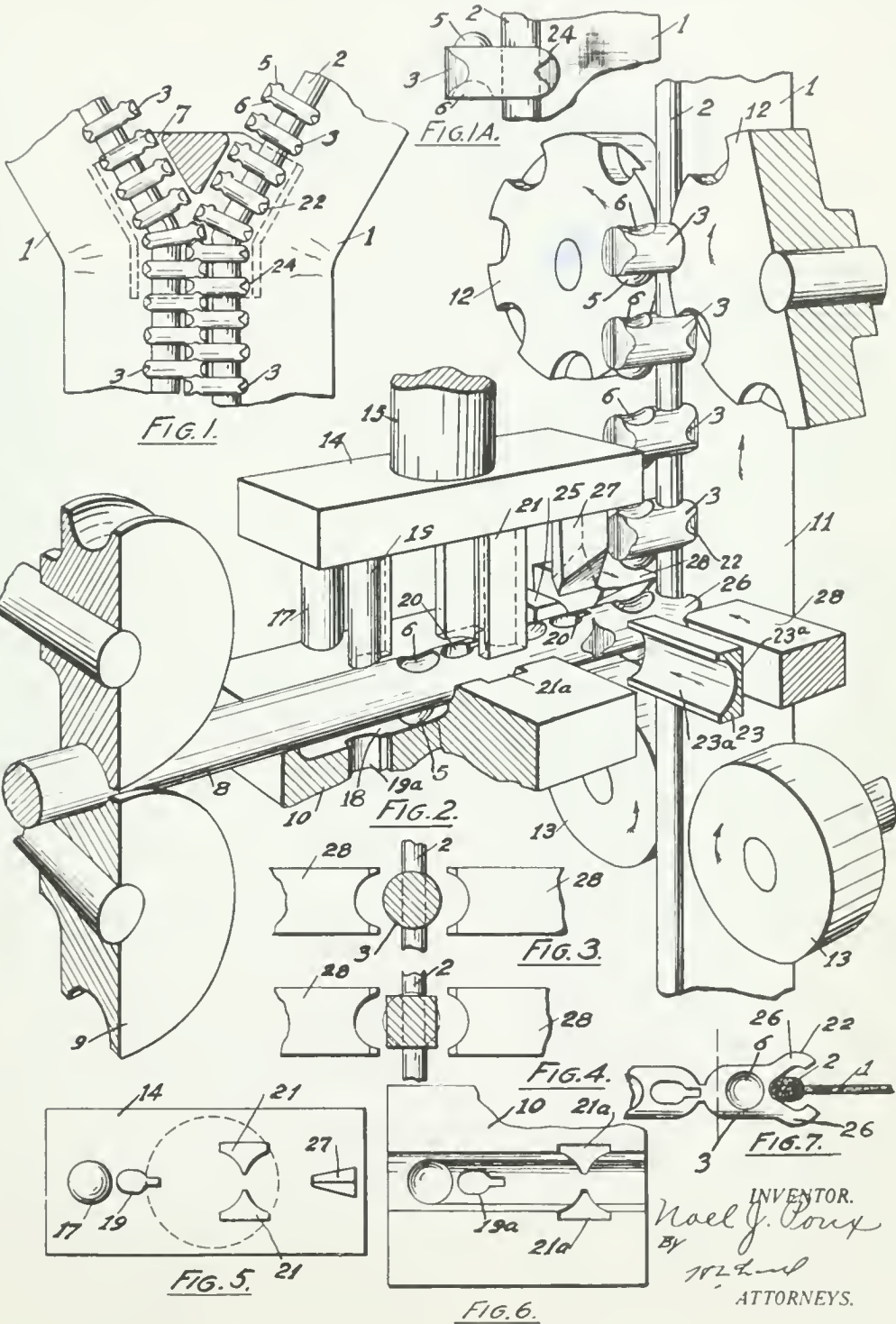
April 20, 1937.

N. J. POUX

2,078,017

METHOD OF MAKING SEPARABLE FASTENERS

Original Filed Jan. 3, 1931



INVENTOR.
Noel J. Poux
 BY
W. L. ...
 ATTORNEYS.

UNITED STATES PATENT OFFICE

2,078,017

METHOD OF MAKING SEPARABLE
FASTENERSNoel J. Poux, Meadville, Pa., assignor, by mesne
assignments, to Hookless Fastener Company,
Meadville, Pa., a corporation of PennsylvaniaApplication January 3, 1931, Serial No. 506,363
Renewed March 10, 1937

18 Claims. (Cl. 153—1)

The present invention is directed to the method of making slide fastener members, particularly of the type having attaching jaws, or prongs which are set astride a fastener tape and secured thereon and which members are provided with interlocking projections and recesses at their free ends. Heretofore the common practice of making such members has been to form the members individually and then secure them on the tape. In the present invention a plurality of members are formed with recesses and projections on opposite sides of each member, the exterior edges of the members fashioned, the interior surfaces of the prongs, or jaws, shaped and the members severed. Preferably the severance is between the jaws of one member and an adjacent member and the members are preferably severed as one of the members is united with the tape. In this way the fabrication is simplified, the operations made more certain and refinements in the members may be accomplished. Features and details of the invention will appear from the specification and claims.

A preferred embodiment of the apparatus with which the method may be practiced is illustrated as follows:—

Fig. 1 shows a plan view of the fastener.

Fig. 1a a side elevation of one of the interlocking members.

Fig. 2 a perspective view, parts being broken away, showing the apparatus.

Fig. 3 a side elevation of the jaw closing mechanism.

Fig. 4 a modification of the jaw-closing dies.

Fig. 5 a bottom view of the punches.

Fig. 6 a plan view of the punch-receiving dies.

Fig. 7 a plan view of the end of the rod prior to the severance of the member and the closing of the jaws.

1—1 mark the stringers, 2 ribs along the edges of the stringers, and 3 interlocking members secured to the edges of the stringers, these interlocking members having projections 5 and recesses 6 on opposite sides of the members and these recesses and projections are swung into and out of engagement in the usual manner through the action of a slider 7.

In the making of the fastener the members are made from a rod or strip 8. This rod is intermittently fed forward by rolls 9. It traverses the lower punching die 10.

A stringer 11 is arranged in the path of the rod. This stringer is intermittently advanced through the action of the rolls 12.

The rolls also give the jaws the final squeeze.

Preferably the action of the rolls involves the engagement of the attached members 3. Tension rolls 13 are provided through which the stringer is fed, these rolls being subjected to some resistance so as to properly tension the stringer.

The punches are carried by a head 14 from a plunger 15. This plunger is operated through any ordinary punch press (not shown). A punch 17 is carried by the head 14 and upon the depression of the head indents the rod forming the recess 6. At the opposite side of the rod, a projection 5 is formed, the die 10 being provided with a recess 18 to receive the projection.

With the next advance of the rod a key-hole shaped slot 20 is formed by a similarly shaped punch 19, the punch extending through the material and forcing the same through an opening 19a in the die, this operation removing the intervening material between the jaws. With the next advance of the rod punches 21 cut rounded notches in the rod at the rear of the key-hole slots. These notches, using the strip in the form of the rod shown, outline the exterior edges of the fastener members. The rounded notches formed by this action give a rounded end 22 to the members so that they may be more readily operated upon by the slider. The punches 21 operate in die openings 21a. With the next forward movement of the rod the key-hole shaped openings are advanced to the position opposite the cutter 23. This cutter operates in an interval or dwell between the forward movement of the rod and the descent of the punches. It has a concave cutting surface on one face and preferably a plane cutting surface 23a on the opposite face. It operates in connection with a die 25 at the opposite side of the rod. The concave cutting surface forms a rounded end 24 (see Fig. 1a) and the plane cutting face leaves the free end of the interlocking member square with the projection and recess sides of the member. The cutter 23 operates and severs jaws 26 of the second fastener element from the end in Fig. 7 forming an open slot at their ends and in the same operation severs the end fastener element from the second one from the end in Fig. 7. A spreader 27 spreads these jaws with the next reciprocation of the head, shaping the jaws, particularly the inner edges of the jaws, to the form shown in Fig. 7. With the next forward movement of the rod these jaws are advanced into position over the rib 2 on the stringer and simultaneously with, or slightly before, the cutters operate to sever the member, closing dies 28 operate upon the open jaws to close them, pressing them into clamping engagement with the rib.

With each cycle of the operation the feed rolls 12 advance, thus carrying the member which has been clamped in position and severed from the rod to a position above the plane of the rod so as to place the stringer in position to receive the next successive member. In this way the added handling incident to a forming of the members prior to their engagement with the stringer is avoided.

While the rod 3 so far as described is round in cross section and I have referred to the recess and projection sides of the member as that portion of the member involving the surfaces included circumferentially in the parts occupied by the recess and projection and extending axially therefrom in Fig. 4 I have shown the rod in square form. This may be used where it is desired to have interlocking members of this cross section and the dies 28 under these conditions will fashion the jaw end of the members as desired. As indicated in Fig. 4 it would give the jaw end of the clamps a round cross section and the free end of the member may retain a shape having parallel plane sides for the recess and projection.

It will be noted that while the rod is still integral the recesses and projections of the members are formed for a plurality of members and the intervening material is removed forming the jaws, or prongs for a plurality of members and after completely forming this plurality of members one member is severed from another. Thus in the rod as shown recesses for three distinct members are formed and the exterior edges of these members are also formed. Jaw slots for three distinct members are formed while the parts are integral, and the exterior surfaces of the jaws, or the exterior edges on a plurality of the members are formed by cutters 21 prior to the severance of one of those members from another and the interior surface of the jaws is shaped by the spreader while the two last members are still united and the jaws are severed one from the other with the severance of one member from another. This affords a simpler manner of fabricating the members, maintaining them in proper relation and permits, if desired, a greater range of finishing of the members than with practices heretofore used. It also simplifies the transfer, or assembly to the tape and while in the present exemplification and preferably the jaws are moved to a position astride the tape, in the broader phases of the invention it is only necessary that there should be relative movement of the jaws and tape to bring the tape within the jaws.

By forming the strip with a plurality of interlocking members formed, or partially formed, and with a major portion of the side edges of the members unobstructedly exposed it is possible to finish these edges and portions of the members with greater facility. As shown, this adaptability is utilized in the convenient arrangement of the cutting tools 23. By reason of this unobstructed edge the cutting tools may be made with the concave cutting surfaces 23a giving to the jaw end of the members an eased or rounded shape.

The connection between the members is also within the sides of the members and this facilitates the advance of the members with relation to the punches, and the integral connection gives a greater strength to the strip in handling and presenting it to the fabricating tools.

What I claim as new is:—

1. The method of forming separable fasteners which consists in forming interlocking member

jaws on the end of a rod by removing intervening material; feeding the rod and advancing the member jaws while integral with the rod to move the jaws to a position to straddle the edge of a fastener stringer; closing the jaws; and severing the member from the rod.

2. The method of forming separable fasteners which consists in forming interlocking member recesses and projections along side faces of a rod and also jaws on the end of the rod by removing intervening material; feeding the rod and advancing the member jaws while integral with the rod to move the jaws to a position to straddle the edge of a fastener stringer; closing the jaws; and severing the member from the rod.

3. The method of forming separable fasteners which consists in forming interlocking member recesses and projections along side faces of a rod and also jaws on the end of the rod by removing intervening material and with a rib-receiving recess within the jaws; feeding the rod and advancing the member jaws while integral with the rod to move the jaws to a position to straddle the edge of a fastener stringer; closing the jaws; and severing the member from the rod.

4. The method of forming separable fasteners which consists in forming successively interlocking member jaws on the end of a rod by removing intervening material; feeding the rod and advancing the member jaws while integral with the rod to move the jaws to a position to straddle the end of a fastener stringer; closing the jaws; severing the member from the rod; and advancing the stringer transversely to the direction of movement of the rod to place the members thereon.

5. The method of forming separable fasteners which consists in forming interlocking member jaws at the end of a rod; spreading the jaws; feeding the rod and advancing the member jaws while integral with the rod to move the jaws to a position to straddle the edge of a fastener stringer; closing the jaws; and severing the member from the rod.

6. The method of forming separable fasteners which consists in forming interlocking recesses and projections along side faces of a rod and also jaws on the end of the rod; and severing the member thus formed from the rod.

7. The method of forming separable fasteners which consists in forming interlocking recesses and projections along side faces of a rod and also jaws on the end of the rod; spreading the jaws; and severing the member thus formed from the rod.

8. The method of forming separable fasteners which consists in forming interlocking recesses and projections along side faces of a rod and also jaws on the end of the rod by removing the intervening material; and severing the member thus formed from the rod.

9. The method for the production of metal elements for sliding clasp fasteners from strips, which consists in cutting in a metal strip of a width equal substantially to one of the plane dimensions of the finished element, limb forming slits disposed intermediate the edges of the strip and lengthwise thereof, said slits being spaced apart a distance sufficient to provide a single slit in each element portion of the strip and with the slits opening through an edge of the finished element, and alternately spreading the element portions at opposite sides of the slits to provide cloth engaging limbs and severing said element portions from the strips.

10. The method for the production of metal elements for sliding clasp fasteners from strips, which consists in cutting in a metal strip of a width equal to one of the plane dimensions of the finished element spaced apart limb forming slits extending lengthwise of the strip and intermediate the lateral edges of the same, said slits disposed in each element portion of the strip with one end of the slit opening through an edge portion of the finished element, and alternately spreading the limbs of each element portion and severing the portion from the strip whereby to free the limbs of succeeding element portions.

11. The method for the production of metal elements for sliding fasteners from strips, which consists in cutting in a metal strip of a width equal to one of the plane dimensions of the finished element, limb forming slits spaced apart a distance to provide a limb in each successive element to be cut from the strip, spreading the free limb of the end element for receiving a cloth strip or the like, and severing the end element from the strip.

12. The method for the production of metal elements for sliding fasteners from strips, which consists in cutting in a metal strip of a width equal to one of the plane dimensions of the finished element, limb forming slits spaced apart a distance to provide a limb in each successive element to be cut from the strip, spreading the limbs of the elements, and severing the elements from the strip.

13. The method of producing sliding fastener elements from a metal strip, which consists in cutting slits at spaced intervals in a metal strip of a width equal to one of the plane dimensions of the finished element, spreading apart the limbs of the elements at opposite sides of the slits, and severing the strip at spaced lengths to provide elements each having a slit therein opening through an edge thereof.

14. The method of producing sliding fastener elements from a metal strip, which consists in cutting slits in a metal strip of a width equal to one of the plane dimensions of a finished element with the slits spaced apart a distance to provide a slit in each element when severed from the strip and with the slits disposed to open through one edge of their respective elements when sev-

ered from the strip, opening the slits of the successive end elements to spread the limbs of the elements apart at the end of the strip, and severing the elements successively from the strip.

15. The method of producing sliding fastener elements from a metal strip, which consists in cutting in a metal strip of a width of the finished fastener elements, spaced apart lengthwise extending slits one for each element of the strip and with the slit in the end element opening through the end of the strip, opening the end slit of the end element by spreading the element parts at opposite sides of the slit for the reception of a piece of cloth, closing said slit by bending said element parts back toward initial position to clamp the element to the cloth, and then transversely cutting the strip with the cut intersecting the outer end of the next adjacent slit to sever the cloth attached element from the strip and free the end of the next adjacent slit.

16. The method of forming separable fasteners which consists in forming a plurality of interlocking member recesses and projections and also jaws on a blank with the members connected end to end and with the connections between the members within the outer walls of the members; advancing the jaws of an end member astraddle the edge of a fastening stringer; closing the jaws; and separating the member from the succeeding member.

17. The method of forming separable fasteners which consists in forming on a long strip of material an interlocking member with recesses and projections and also jaws, placing said jaws astride the edge of a tape while the member is integral with the strip, closing the jaws, and severing the member from the strip.

18. The method of forming separable fastener elements of the class described which consists in providing an elongated piece of material with rounded side portions, operating on said material to provide interlocking projections and recesses and a tape receiving recess, and finally severing the fastener member so formed from the piece of material while retaining the original rounded surface of said side portions in the sides of the finished fastener member.

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PLAINTIFF'S EXHIBIT No. 3

D. Silberman Patent No. 2,437,793

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March 16, 1948.

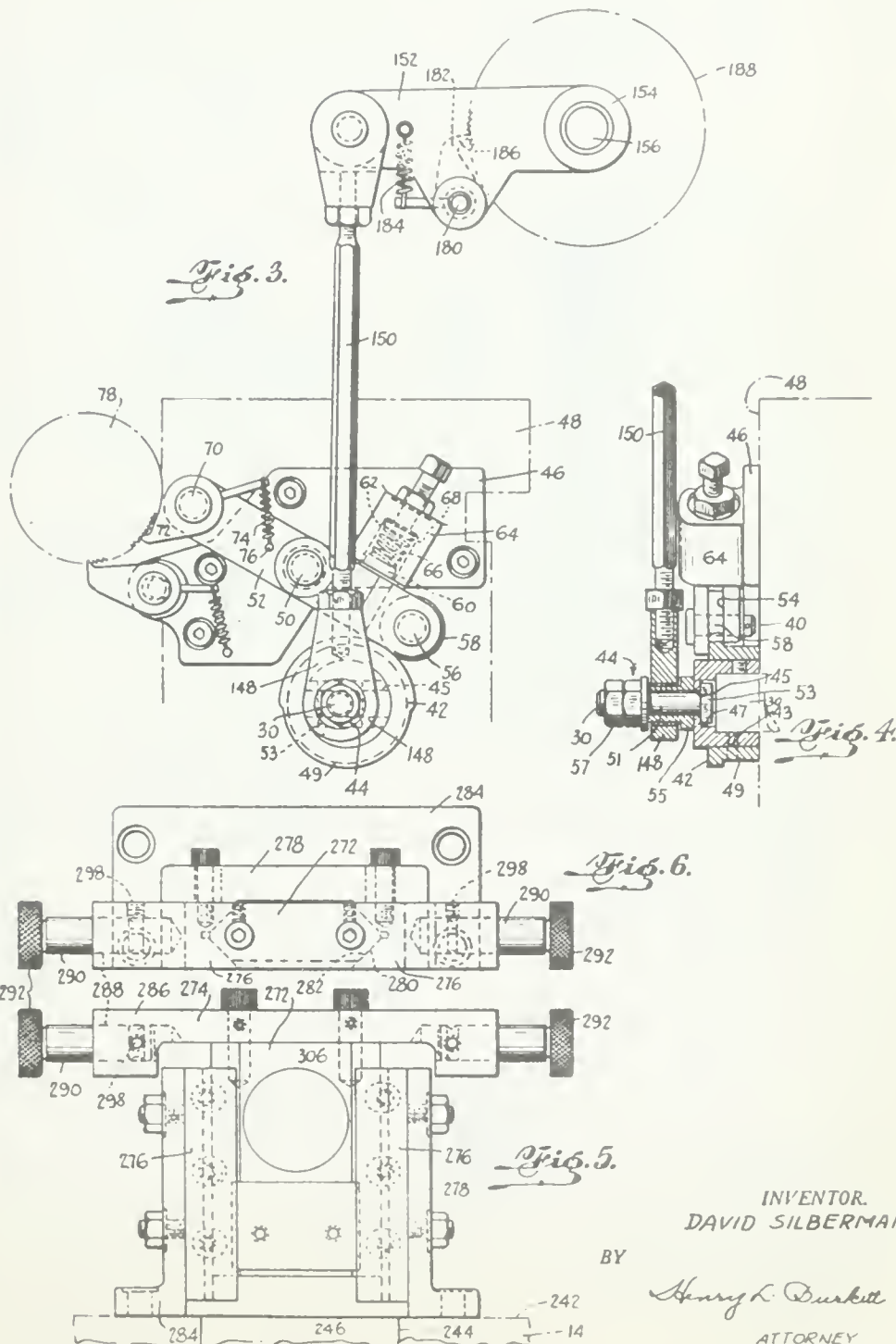
D. SILBERMAN

2,437,793

ZIPPER MANUFACTURING MACHINERY

Filed Sept. 23, 1944

10 Sheets-Sheet 2



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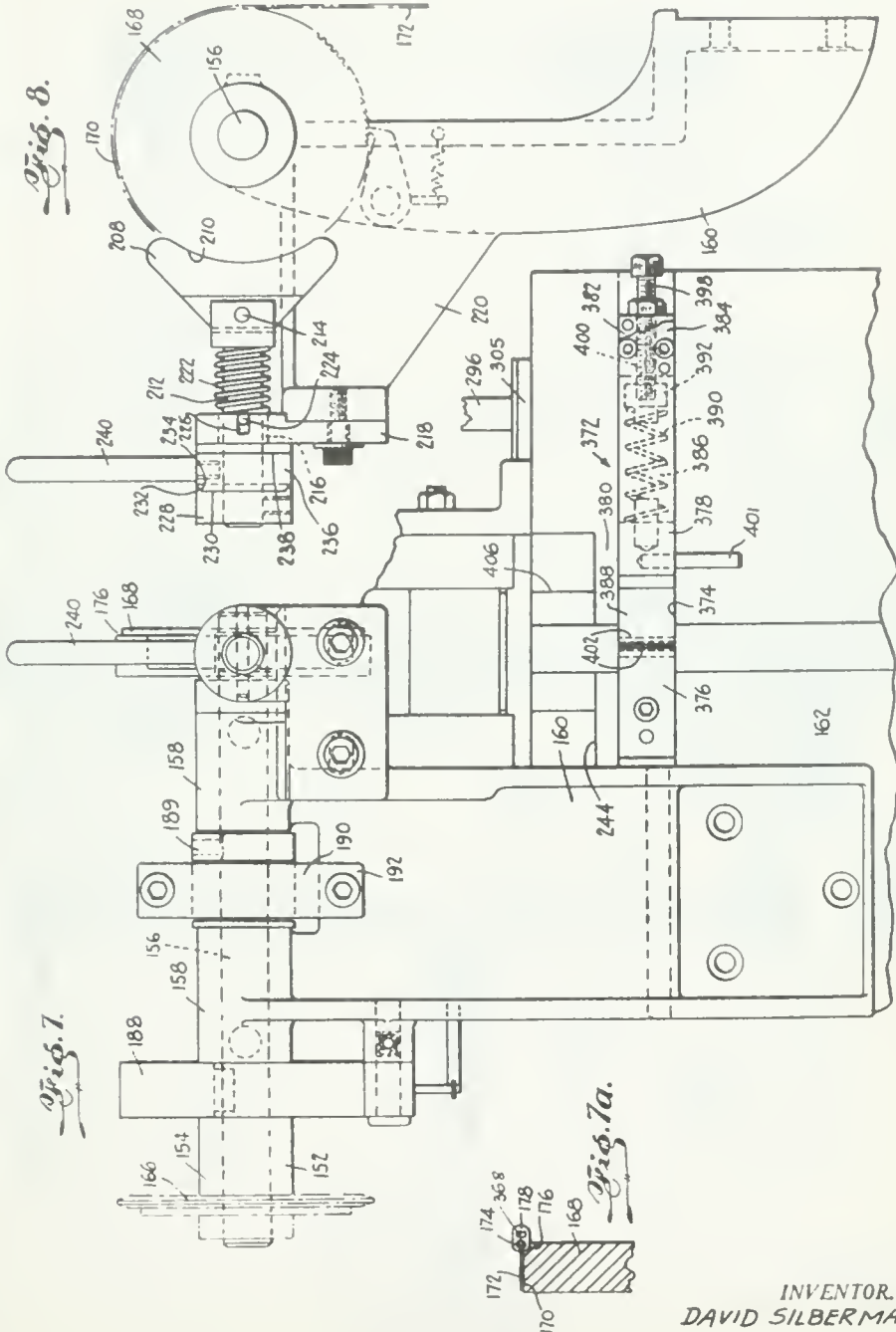
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ZIPPER MANUFACTURING MACHINERY

Filed Sept. 23, 1944

10 Sheets—Sheet 3



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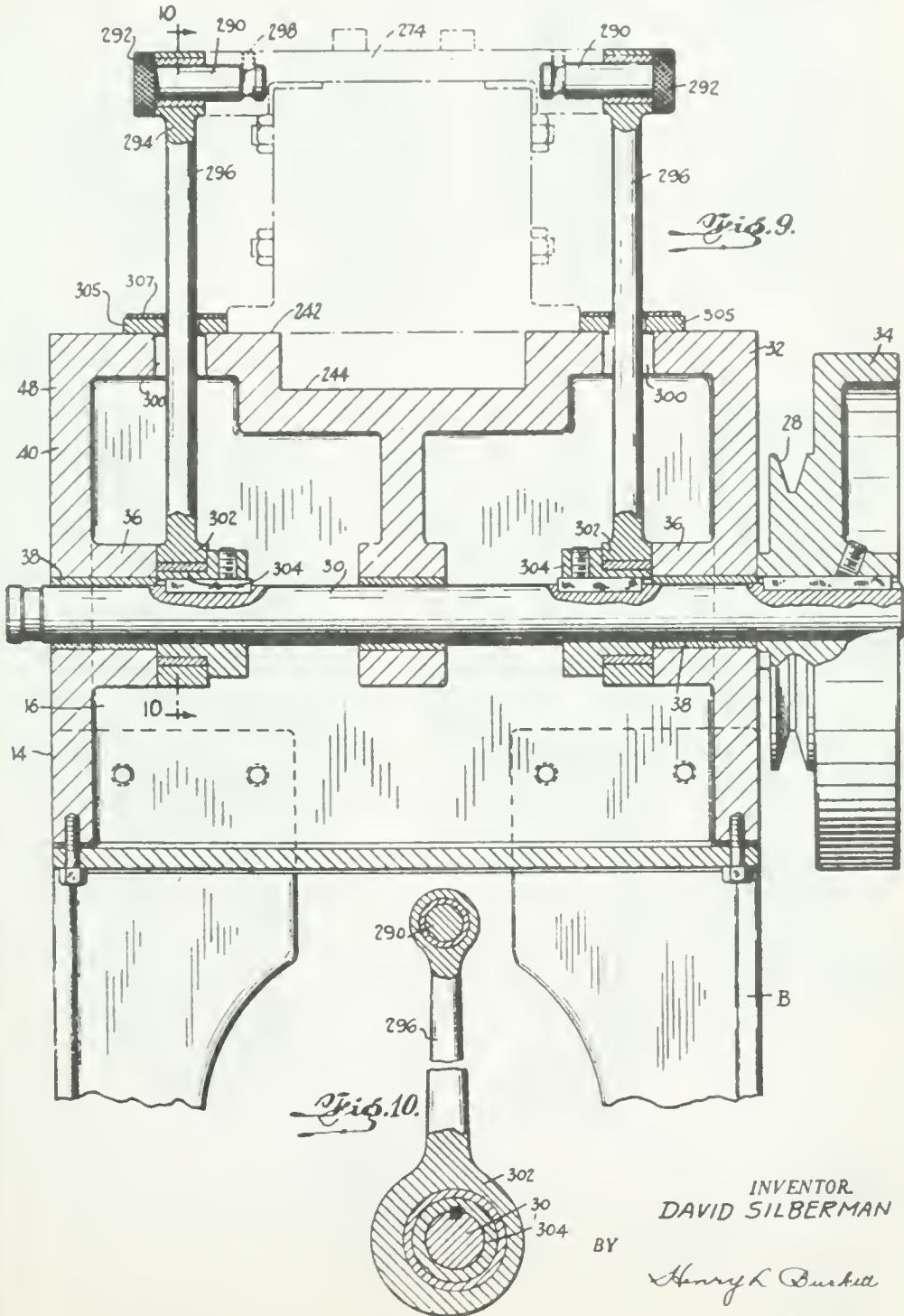
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ZIPPER MANUFACTURING MACHINERY

Filed Sept. 23, 1944

10 Sheets—Sheet 4



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ZIPPER MANUFACTURING MACHINERY

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10 Sheets—Sheet 5

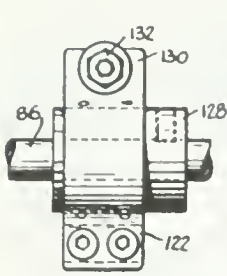


Fig. 14.

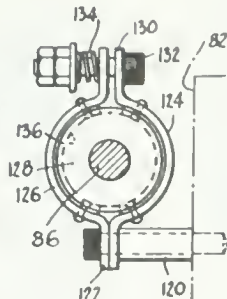


Fig. 13.

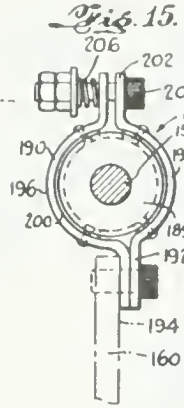


Fig. 15.

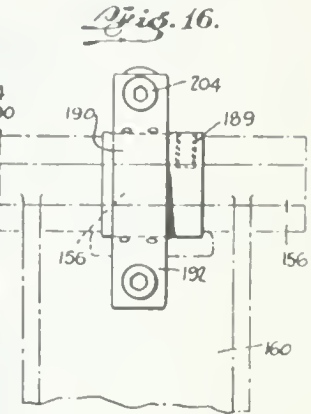


Fig. 16.

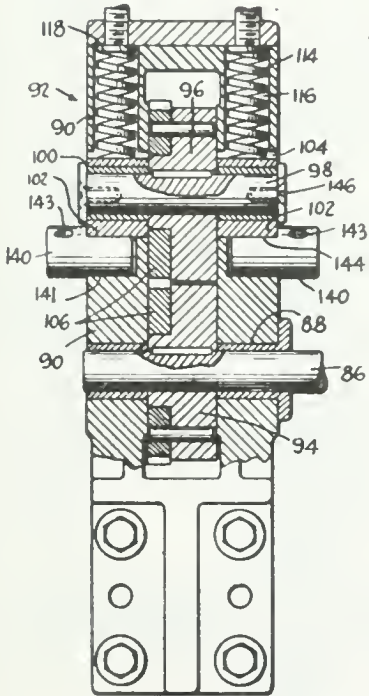


Fig. 11.

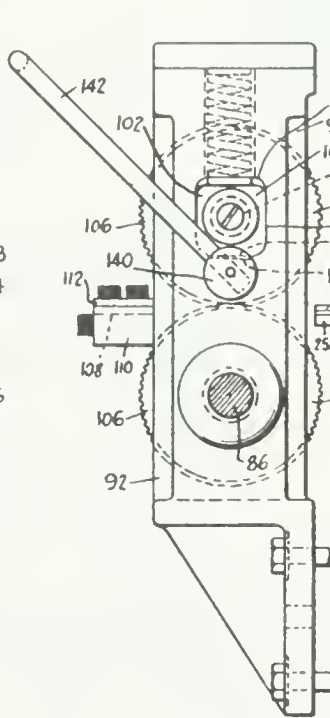


Fig. 12.

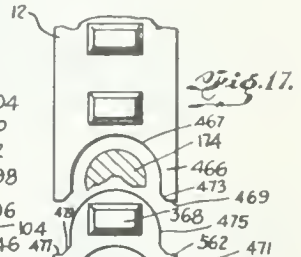


Fig. 17.

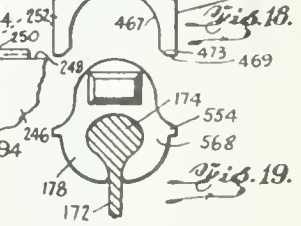


Fig. 18.

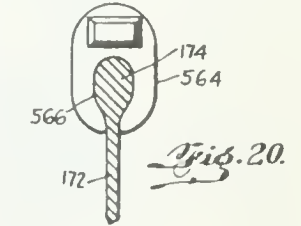


Fig. 19.

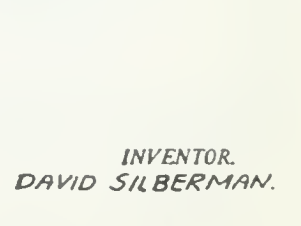


Fig. 20.

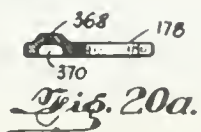


Fig. 20a.

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ZIPPER MANUFACTURING MACHINERY

Filed Sept. 23, 1944

10 Sheets—Sheet 6



Fig. 27.

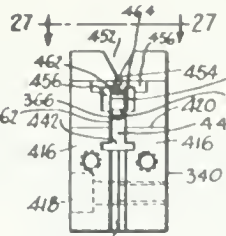


Fig. 26.

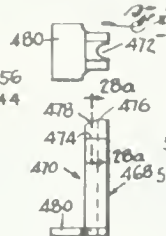


Fig. 28.

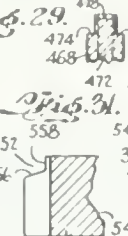


Fig. 29.

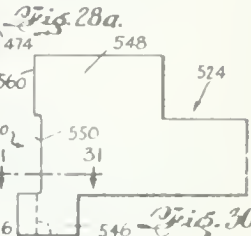


Fig. 28a.



Fig. 31.

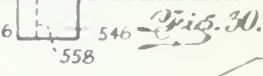


Fig. 30.

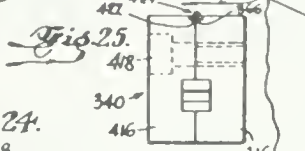


Fig. 25.

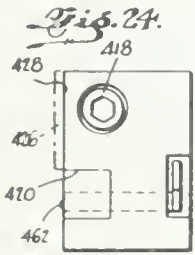


Fig. 24.

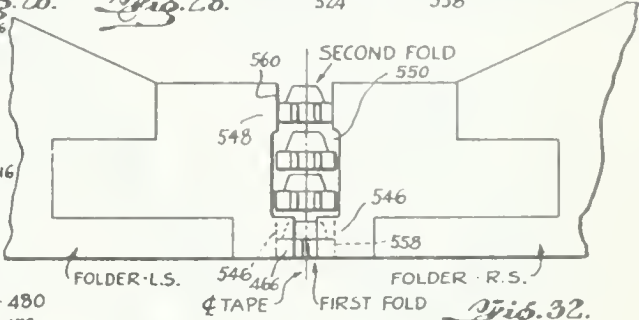


Fig. 32.

Fig. 23.

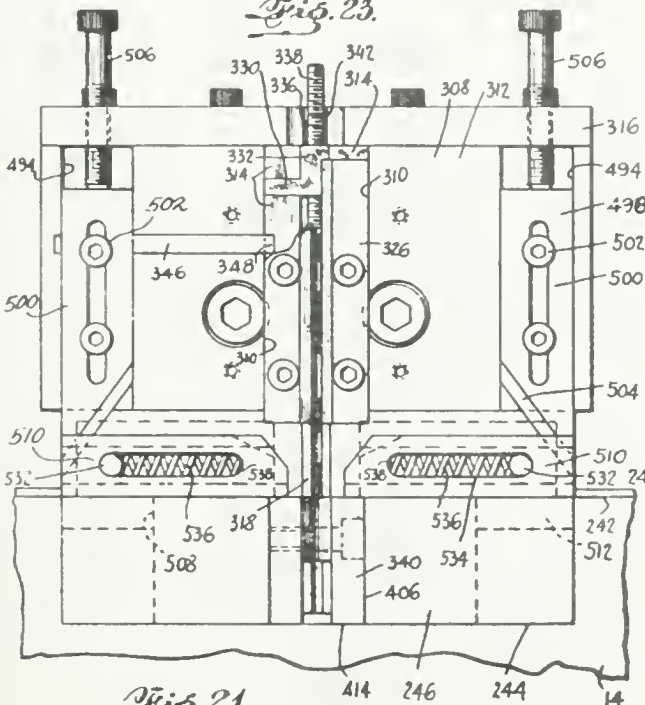


Fig. 21.

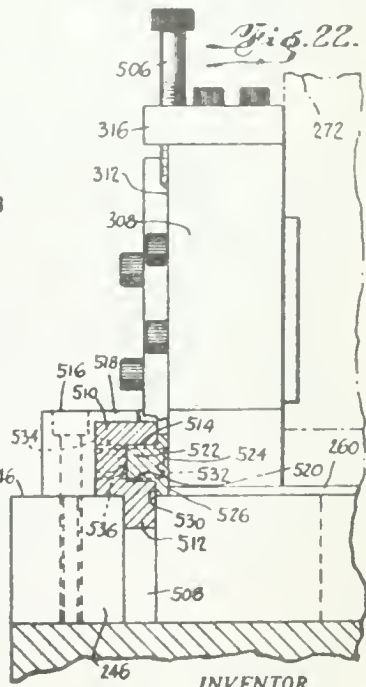


Fig. 22.

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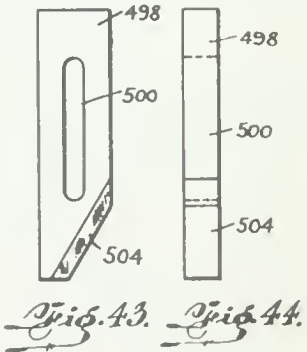
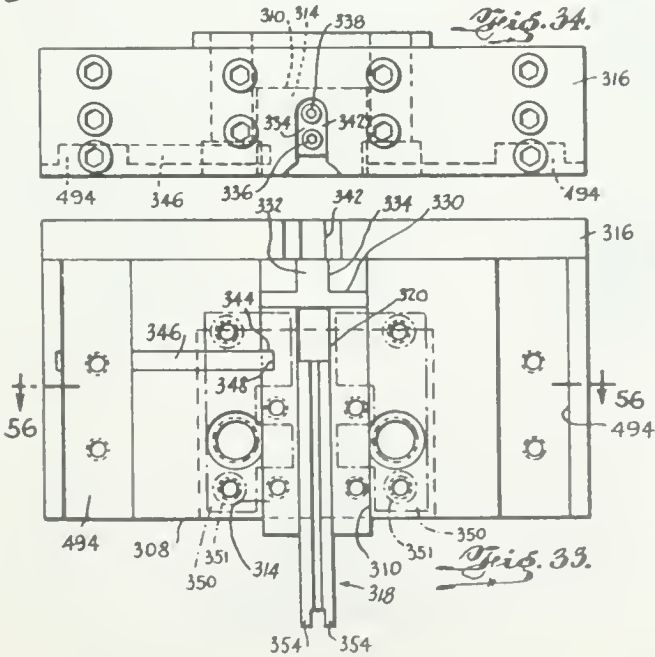
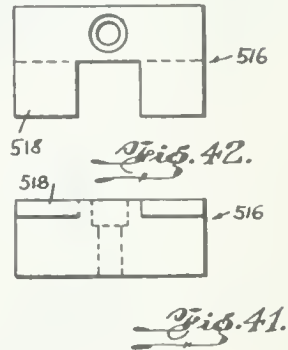
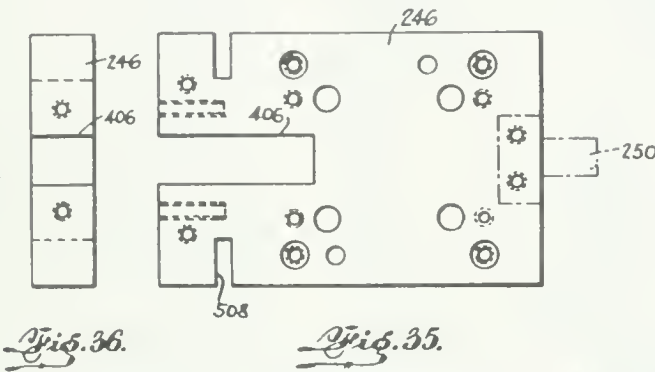
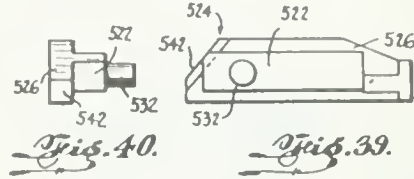
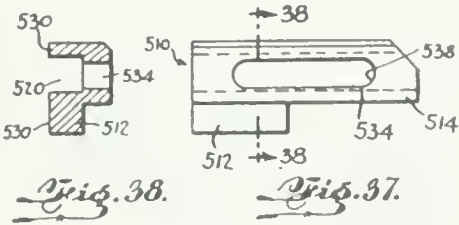
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2,437,793

ZIPPER MANUFACTURING MACHINERY

Filed Sept. 23, 1944

10 Sheets—Sheet 7



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ZIPPER MANUFACTURING MACHINERY

Filed Sept. 23, 1944

10 Sheets—Sheet 8

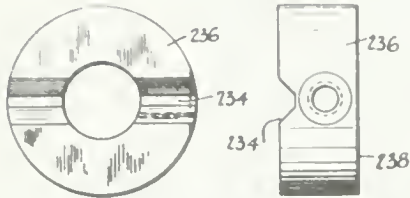


Fig. 45.

Fig. 46.

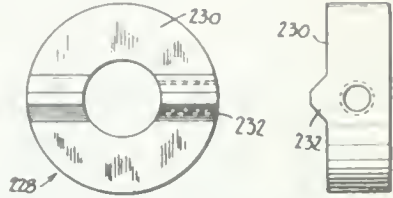


Fig. 47.

Fig. 48.

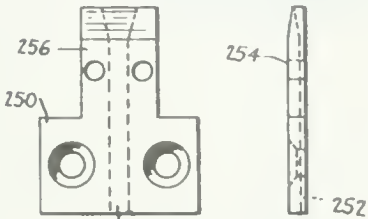


Fig. 49.

Fig. 50.



Fig. 51.

Fig. 52.

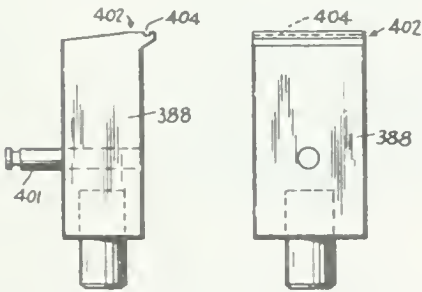


Fig. 53.

Fig. 54.

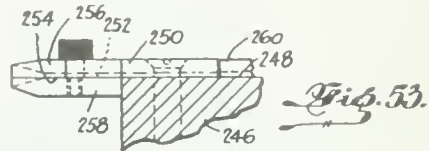


Fig. 56.



Fig. 57.

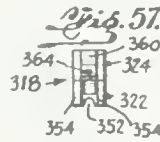


Fig. 58.

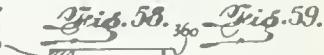


Fig. 59.

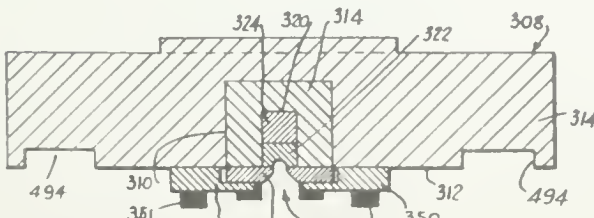


Fig. 60.

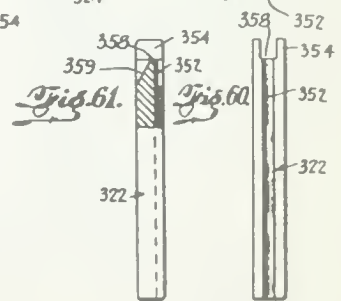


Fig. 61.

Fig. 62.

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ZIPPER MANUFACTURING MACHINERY

Filed Sept. 23, 1944

10 Sheets—Sheet 9

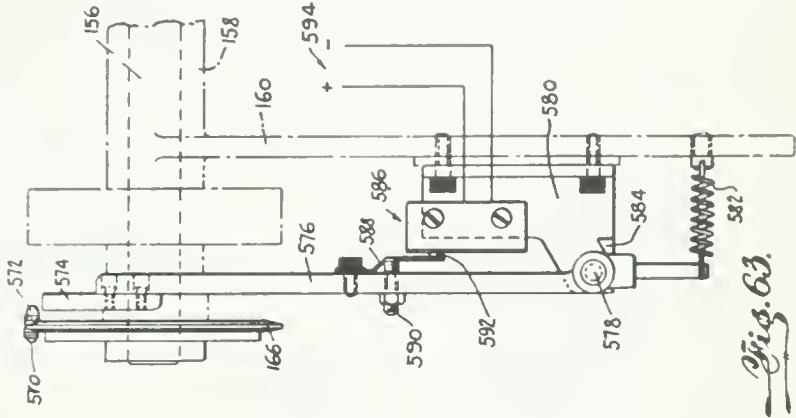


Fig. 63.

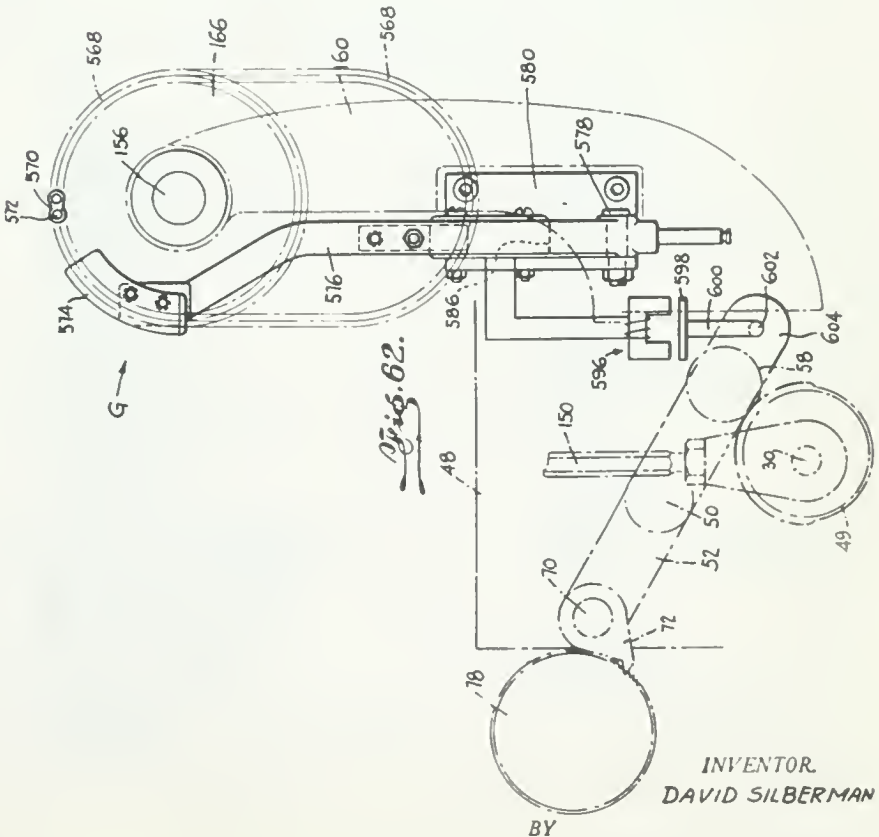


Fig. 62.

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ZIPPER MANUFACTURING MACHINERY

Filed Sept. 23, 1944

10 Sheets-Sheet 10

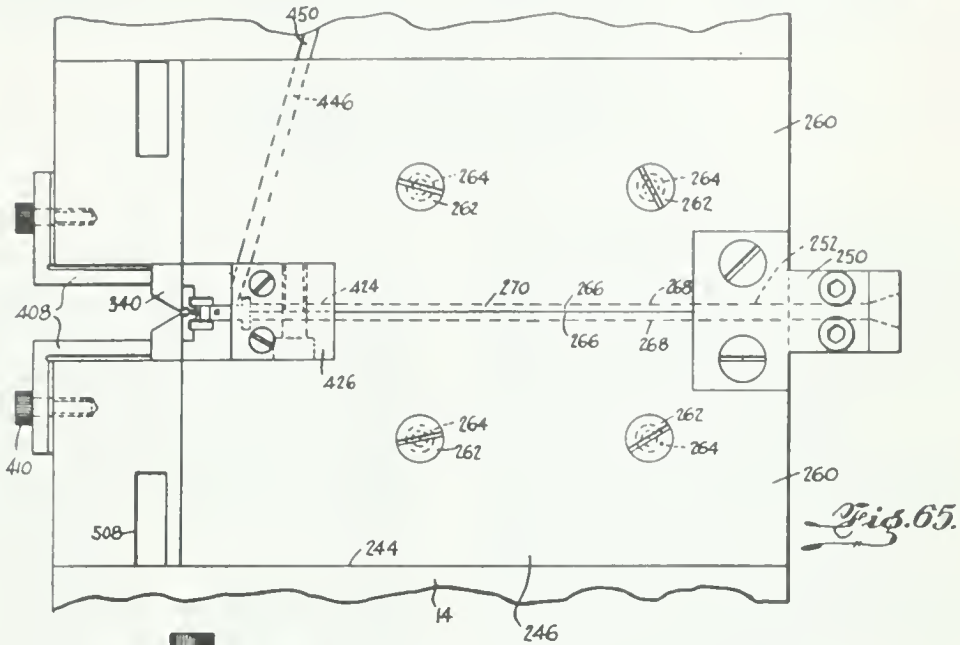


Fig. 65.

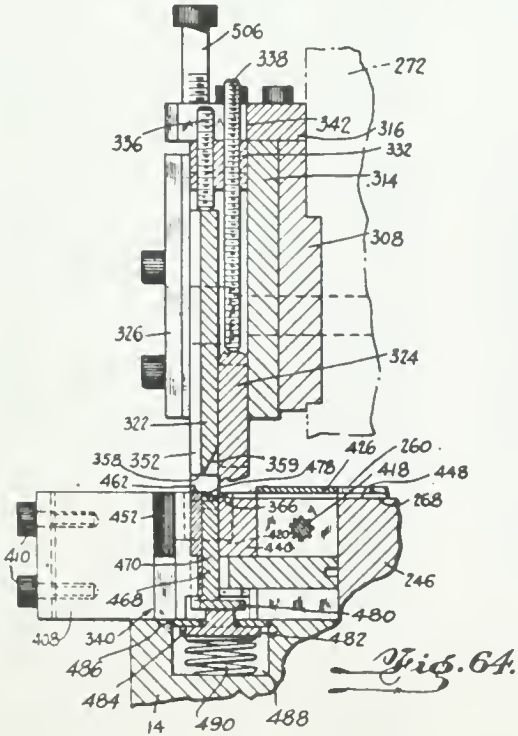


Fig. 64.

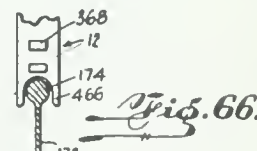


Fig. 66.

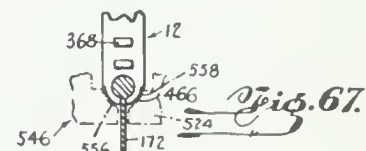


Fig. 67.

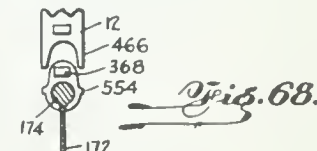


Fig. 68.



Fig. 69.

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UNITED STATES PATENT OFFICE

2,437,793

ZIPPER MANUFACTURING MACHINERY

David Silberman, New York, N. Y.

Application September 23, 1944, Serial No. 555,572

40 Claims. (Cl. 153—1)

1

This invention relates to zipper manufacturing machinery.

In the manufacture of zippers, one of the intermediate products generally is a stringer, a length of material which may take the form of a tape, upon an edge of which are disposed a plurality of members to which reference may sometimes be made herein as "zipper elements." In the manufacture of stringers, vital advances have been consummated by changes in the manufacturing process, where such changes result in large advantages in operation, and in the value of the product, both from the monetary and the mechanical standpoints.

One result sought under all circumstances is a stringer, the elements of which lock together firmly, and do not tend to separate on lateral stress. Also, it is desired that a formation be produced by the closed elements of the stringer to permit speedy and solid engagement by the slider, the member which cams the elements into and out of engagement with each other, and to permit use of a simple slider structure.

Another result that is sought is a simple machine, taking a strip of metal at one point, and a tape at another point, and delivering a completed stringer from some third point. It is desired that the simplicity of such a machine should be such that little or no supervision, and little or no repairs, be required for its operation. One great point in the cost of production of an article such as a zipper is the amount of time during which the machine is shut down for repairs, and is non-productive. Reduction of the amount of time during which it will be required to shut such a machine down for the replacement of worn out parts, aside from repairs from breakdowns, decreases the cost of the zipper produced by the machine.

It is an object of the invention so to simplify the operation of a zipper manufacturing machine that no particular mechanical skill will be requisite for repair or replacement of parts.

These machines have rapidly moving parts, introducing the factor of vibration, which, among other things, reduces the life of the machine. It is an object of the invention to construct a machine of this type so that vibration is reduced to a minimum.

The machine to be described takes a simple strip of metal, and forms and separates a zipper element from the strip, and attaches that element to a tape. The machine is designed to carry on this operation at such great speed that a continuous tape, with elements attached to its edge,

2

seems to feed from the machine. A single reciprocating part forms, cuts and attaches elements to the tape during each reciprocation. It is an object of the invention to locate the parts of the machine so that substantially all power delivering parts will be aligned in such manner with the main shaft that substantially little, if any, off-center power delivery will occur, and so that power delivery will be substantially vertically towards the base of the machine.

The resultant reduction in side sway during the operation of the machine limits vibration almost exclusively to that arising from the vertical impact of the punch upon the metal strip. Since substantially all the power-delivering parts of the machine, moving in the one direction at the time of impact, are thus balanced in great degree, the forces, which normally tend, during operation, to produce extreme vibration in a machine of this character, are eliminated.

In the production of zipper stringers, scrap is a problem of great importance. There is the monetary saving from elimination of metallic loss. Many of the so-called scrapless machines are incorrectly named; in substantially all cases, scrap of some kind is involved. It has been ascertained that, in cases where elements were specified, yet no method of production was ascertainable for producing the elements specified. One case deals with the production of zipper elements by actual incision through the metal, and dividing the metal by a mechanical spreader. Such method, for wire of very small dimensions, is impractical. A spreader punch for such purposes would destroy, rather than make an incision in, the metal.

It is an object of the invention to manufacture zipper stringers by making a zipper element and attaching it to a tape as a part of a continuous operation, while a strip of metal is formed into the elements, and the elements are attached to the tape as a part of a continuous operation, where no scrap of any kind is produced, where all metal from the metallic strip is utilized in the production of the element, and where no incision is produced in the strip for the production of such elements.

The scrap produced by so-called scrapless machines has an important bearing upon efficient operation. The product is a very fine, jewel-like element. Therefore, the scrap produced in making such elements is of a very minute character. Such scrap tends positively to adhere to the moving parts of the machine, no matter how the designer intends to discharge it from the appa-

ratus. These moving parts, which produce the element, are small. Because of their small dimensions, they are susceptible to injury from unpredictable impacts derived from such minute pieces of scrap. Since the parts move at great speed, the elimination of such scrap must be solved; otherwise, the machine is subject to various periods of shutdown while parts broken or injured because of such scrap are being replaced or repaired.

It is an object of the invention to eliminate scrap entirely from the production of zipper elements and their attachment to tape for the production of zipper stringers.

It is an object of the invention to provide a press wherein the apparatus need not be knocked down for repair or replacement of punch or die parts.

Other objects of this invention will be set forth hereinafter, or will be apparent from the description and the drawings, in which are illustrated embodiments of apparatus, process and product exemplifying the invention.

The invention, however, is not intended to be restricted to any particular construction or product, or any particular arrangement of parts, or any particular application of such construction or arrangement of parts, or any specific method of operation, or any of various details thereof, even where specifically shown and described herein, as the same may be modified in various particulars, or may be applied in many varied relations, without departing from the spirit and scope of the claimed invention, practical constructions embodying certain details of the invention being illustrated and described, but only for the purpose of complying with the requirements of the statutes for the disclosure of operative embodiments, but without attempting to disclose all of the various forms and modifications in which the invention might be embodied.

On the drawings, in which the same reference characters refer to the same parts throughout, and in which are disclosed such practical constructions,

Fig. 1 is a side elevational view of apparatus embodying features of the invention, the base, the frame and the reel of wire being broken away, and a part of an oil container being broken away to disclose other parts of the mechanism;

Fig. 1a is a plan view of a portion of a stringer produced by apparatus such as shown in Fig. 1;

Fig. 2 is an elevational view of the apparatus shown in Fig. 1, seen as looking at the apparatus from the right hand side in Fig. 1, the frame, the reel of wire, the wire itself and the part of the base being detached or removed; and the belt being broken away in section;

Fig. 3 is a detail elevational view, to enlarged scale, of parts of the wire feeding and tape feeding mechanisms, as seen in Fig. 1;

Fig. 4 is a side elevational view of a detail of the apparatus shown in Fig. 3, the connecting rod being broken away in section, and other parts of the apparatus not being shown, and the assembly of the cam and eccentric being broken away in section for clarity;

Fig. 5 is a detail front elevational view of the assembly of the ram, ram housing and crosshead with the base;

Fig. 6 is a plan view of the apparatus shown in Fig. 5, the base not being shown;

Fig. 7 is an elevational view, to enlarged scale, of the tape feeding and tensioning mechanisms as seen from the right hand side of Fig. 1, the

ram housing and other details of the apparatus being broken away;

Fig. 7a is a view, to enlarged scale, of a portion of the tape feeding wheel, showing the manner of cooperation of the stringer with the wheel;

Fig. 8 is a side elevational view of a detail of the apparatus shown in Fig. 7, illustrating the bracket carrying the tape feeding means and the associated parts cooperating with the tape feeding wheel, the stringer being shown by dot-and-dash lines;

Fig. 9 is a vertical sectional view, to enlarged scale, taken substantially lengthwise of the main housing, parts of the base being broken away, and parts of the apparatus being removed, the ram housing and associated parts being shown in dot-and-dash lines, the flywheel and the pulley being broken away in section in part, and part of the main shaft and the connecting rods being broken away in section;

Fig. 10 is an elevational view of the connecting rod as assembled with its shaft and pin, as shown in Fig. 9, parts being broken away in section;

Fig. 11 is an elevational view, to enlarged scale, of the wire feeding assembly shown in Fig. 2, parts of the apparatus being broken away in section;

Fig. 12 is an end elevational view of the apparatus shown in Fig. 11, illustrating the association of wire guiding devices therewith and in relation to the base;

Fig. 13 is a detail view, in elevation, of a part of the braking mechanism for the wire feeding means, the shaft being shown in section, and the base being shown by dot-and-dash lines;

Fig. 14 is a front elevational view of the apparatus shown in Fig. 13;

Fig. 15 is a view, similar to Fig. 13, of the braking mechanism associated with the tape feeding mechanism;

Fig. 16 is a front elevational view of the apparatus shown in Fig. 15;

Fig. 17 is a plan view of a strip as it appears as its end is worked and cut by the element forming means, the strip being broken away, and a part of the tape being shown;

Fig. 18 is a plan view of an element which would be produced by such apparatus as here illustrated if the apparatus were operated without attaching the element directly to the tape;

Fig. 19 is a plan view of an element shown attached to a tape at an intermediate stage of the process of attaching the element to the tape, the tape being shown in section;

Fig. 20 is a plan view of an element attached to the tape after the final stage of attaching elements in accordance with the process, the tape being shown in section;

Fig. 20a is a vertical cross-sectional view of an element such as shown in Fig. 20, the tape not being shown;

Fig. 21 is a front elevational view of the base, die block, clamp blades and punch block assembly, the clamps for the die piece retaining block, for the clamp blade housings, and for the punch piece retaining member not being shown, and the means for fastening the punch block to the ram not being shown;

Fig. 22 is an end elevational view of the apparatus shown in Fig. 21, the base being broken away to show the die block, and the clamp blade housing, and the clamp blade being shown in section, the ram being shown by dot-and-dash lines;

Fig. 23 is a bottom plan view of a die block and associated parts embodying features of the invention;

Fig. 24 is a side elevational view of the block shown in Fig. 23, the stripper plate for the block being shown by dot-and-dash lines;

Fig. 25 is an end elevational view of the die block shown in Fig. 23;

Fig. 26 is a top plan view of the assembly of die block and strip returning member of Fig. 23;

Fig. 27 is a view of the die block as seen from the end indicated by line 27—27 of Fig. 28;

Fig. 28 is an elevational view of the strip returning member;

Fig. 28a is a detail vertical cross-sectional view of a portion of the strip returning member, as seen from the line 28a—28a of Fig. 28;

Fig. 29 is a plan view of the member shown in Fig. 28;

Fig. 30 is an elevational view of the clamp blade or folder for closing the elements upon the tape;

Fig. 31 is a detail cross-sectional view of the clamp blade, as seen from the line 31—31 of Fig. 30;

Fig. 32 is an end elevational view, to enlarged scale and broken away, showing the operation of the folder or clamp members;

Fig. 33 is an elevational view of the punch block, showing the removable punch retaining member and the punch assembled therewith, the clamps for the punch retaining member being shown by dot-and-dash lines;

Fig. 34 is a plan view of the punch block shown in Fig. 33, the punch retaining member being shown in position;

Fig. 35 is a plan view of the die block, the position of one of the wire guides being shown by dot-and-dash lines;

Fig. 36 is an end elevational view of the block shown in Fig. 35, as seen from the left hand end of Fig. 35;

Fig. 37 is an elevational view of a clamp blade housing;

Fig. 38 is a transverse cross-sectional view, on the line 38—38 of Fig. 37;

Fig. 39 is an elevational view of a clamp blade or folder member for cooperation with the housing shown in Fig. 37;

Fig. 40 is an end elevational view of the clamp blade shown in Fig. 39, as seen from the left hand end of Fig. 39;

Fig. 41 is an elevational view of a lock for the clamp blade housing;

Fig. 42 is a plan view of the lock shown in Fig. 41;

Fig. 43 is an elevational view of a cam member for assembly with the punch block for operating the clamp blade or folder;

Fig. 44 is an end elevational view of the cam member shown in Fig. 43;

Fig. 45 is a plan view of a cam member for release of the tape feeding mechanism;

Fig. 46 is an end elevational view of the member shown in Fig. 45;

Fig. 47 is a plan view of the member for cooperation with the cam member shown in Fig. 45;

Fig. 48 is an end elevational view of the member shown in Fig. 47;

Fig. 49 is a plan view of a part of the wire guiding means;

Fig. 50 is an end elevational view of the part shown in Fig. 49;

Fig. 51 is a plan view of a part cooperating with the part shown in Fig. 49;

Fig. 52 is an end elevational view of the part shown in Fig. 51;

Fig. 53 is a detail assembly view, showing the association with the base of the apparatus of the parts of Figs. 49 to 52;

Fig. 54 is a plan view of a detail of the tape tensioning mechanism;

Fig. 55 is a side elevational view of the device shown in Fig. 54;

Fig. 56 is a view in transverse cross-section, on the line 56—56, of the assembly of punch block, punch retaining member and punch, shown in Fig. 33;

Fig. 57 is a bottom plan view of the two sections of the punch, as assembled;

Fig. 58 is an elevational view of one of the sections of the punch shown in Fig. 57, one end of the section being broken away in cross-section;

Fig. 58a is a plan view of the punch section shown in Fig. 58;

Fig. 59 is an end elevational view of one of the sections of the punch shown in Fig. 57;

Fig. 60 is an elevational view of the punch section shown in Fig. 59;

Fig. 61 is a side elevational view of the punch section shown in Fig. 60, part of the punch being broken away in cross-section;

Fig. 62 is a detail view of modified construction for the tape and wire feeding means, associated parts of the apparatus being shown by dot-and-dash lines, and the parts of the apparatus for producing a gap in the stringer being illustrated by full lines;

Fig. 63 is an end elevational view of the apparatus shown in Fig. 62;

Fig. 64 is a detail vertical cross-sectional view, illustrating the association of the punch block, the punch retaining member, and the punch, with the base, the die block, the die piece retaining member, and the different portions of the die, together with the ram;

Fig. 65 is a plan view of a portion of the base, showing the relationship of the die block, the die piece retaining member, the clamps therefor, the stripper plates and the associated elements of the apparatus; and

Figs. 66, 67, 68 and 69 are detail views, illustrating the feeding and forming of the strip in relation to the tape edge, the tape being shown in cross-section.

Machine M (Figs. 1 and 2), illustrated upon the drawings, for the manufacture of stringers 10 (Fig. 1a), may include a mounting such as base B upon which a housing H may be mounted. Extending from base B may be a frame F for supporting a reel R of wire 12 which is guided to the apparatus in the manner to be described, for the production of the stringers.

In conjunction with housing H may be located substantially all mechanism necessary for the production of zipper stringers 10 from wire 12. Such mechanism may include wire feeding means W, tape feeding means T, and element forming and attaching means E. Housing H may take the form of a hollow casting 14, which may be retained upon base B in any suitable manner. The cavity 18 (Fig. 9) of casting 14 may provide a container for lubricating oil. For this purpose, a sight glass 16 (Fig. 1) may be connected with cavity 18 to indicate the level of oil retained therein.

In the instance shown, base B may include a plurality of legs 20. A platform (not shown) may be carried between legs 20 to support a motor (not shown), fixed to the platform by any

suitable means. Power is delivered by the motor through a belt 28 to a pulley 28 upon a main shaft 30 which extends through side wall 32 of casting 14 at that position. A flywheel 34 may be formed together with pulley 28.

Bearing members 36 for shaft 30 may be positioned at a pair of aligned openings 36 in side walls 32 and 40. Shaft 30 extends beyond the outer face of wall 40, where a cam 42 and an adjustable eccentric 44 are mounted. Cam 42 (Figs. 3 and 4) includes a collar 43 secured to the end of shaft 30 extending beyond wall 40. Collar 43 is formed with a slot 45 opening from an undercut transverse squared recess 47. On collar 43 is carried a cam ring 49 which is fixed to collar 43 against rotation by any suitable means. A pin 51 extends through and is slidable in slot 45 and has a squared head 53 received in recess 47. A collar 55 carried upon pin 51 serves as a bearing for adjustable eccentric 44. Suitable lock nuts 57 may be used to lock pin 51 and collar 55 in any adjusted position with relation to slot 45 and recess 47, to vary the eccentricity of eccentric 44. A guard cup 59 may be secured to face 48 of wall 40 to guard these parts.

By means of a plate 46, affixed to face 40, a pin 50 is positioned to function as a bearing for an arm 52. A cut-out 54 is formed in arm 52, and a pin 56 is extended across the opening of cut-out 54 and is fixed in the walls thus formed by the cut-out. A roller 58 is provided its bearing upon pin 56 so that it is in position to bear upon cam ring 49. A follower 60 is mounted to slide in a bore 62 under the action of a spring 66. The bore is formed in a boss 64, formed as a part of plate 46. The spring is retained between the end of the bore and follower 60, and causes arm 52 to retain roller 58 in engagement with ring 49. The pressure of spring 66 may be varied by means of a follower 68 which includes a screw-threaded adjustment at one end of bore 62 for that purpose.

One end of arm 52 is reduced in section, and retains a pin 70 which provides a bearing for the forked end of a finger 72. A spring 74, anchored at one end to an extension 76 from arm 52, engages finger 72 and maintains the finger in engagement with a ratchet wheel 78 for wire feeding means W. Carried in a bracket 80 upon wall 82 of casting 14 is a bearing 84 for a shaft 86 to which ratchet wheel 78 is affixed. Shaft 86 extends parallel to wall 82, and through a pair of bearings 88 (Figs. 2, 11 and 12) carried in the walls 90 of a housing 92. A knurled wheel 94, fixed to rotate with shaft 86, is retained between walls 90.

Above wheel 94, and retained between walls 90, is positioned another knurled wheel 96 affixed to a shaft 98. Shaft 98 is provided bearings 100 in a pair of square members 102 which are free to slide within a pair of openings 104. Openings 104 are formed in walls 90 above bearings 88. A pair of gears 106 are secured, or formed integrally with wheels 94 and 96. These gears mesh at substantially all times to drive both wheels simultaneously from shaft 86.

Wire 12 is inserted between wheels 94 and 96. First however, it must pass through a guide provided by a groove 108. Groove 108 is formed in the top face of a guide piece 110 affixed to housing 92 in advance of the position of knurled wheels 94 and 96. Groove 108 is aligned with the top-most level of wheel 94, and serves to guide wire 12 into proper relation to forming and attaching

means E. A plate 112, affixed to the top face of guide piece 110, closes groove 108 and retains wire 12 within the groove during the feeding action.

Springs 114, retained in recesses 116 formed in walls 90, bear against the top faces of members 102. The extent of openings 104 permits movement of members 102 so that knurled wheels 94 and 96 will be spaced apart sufficiently, positively to engage wire 12 of the thickness necessary for proper operation of the apparatus. At the same time, movement of members 102 will not interfere with proper engagement of gears 106 for driving the knurled wheels. Proper compressor members 118 are threadedly adjustable relatively to recesses 116 for varying the pressure upon members 102.

A bracket 120 (Figs. 2, 13 and 14) may be provided on wall 82. Secured upon bracket 120 are ends 122 of a pair of straps 124 which have accurate sections 126 positioned to encircle a collar 128 fixed to shaft 86. Straps 124 are so formed that at least one set of ends 122, even when secured to bracket 120, or opposed ends 130 will be spaced apart. A bolt 132 passed through ends 130 retains a spring 134 for providing the necessary resiliency as the straps press a braking piece 136 of leather or other suitable material into engagement with the outside face of collar 128. Thus, the action of the step-by-step motion rotating shaft 86 is restrained to movement substantially in one direction.

A pair of pins 140 are fitted into openings 141 in walls 90, and may be rotated by means of a handle 142. For this purpose, openings 143 are formed in pins 140; the ends of handle 142, a U-shaped member, are fitted into the openings, and then are secured in position by means such as set-screws. The pins have flat faces 144 to engage against bottom faces 146 of members 102. Upon movement of handle 142 to lowered position, members 102 are cammed upwardly, and, with them, shaft 86, and its associated knurled wheel 96 and gear. Thus, the feeding mechanism, embodied in the knurled wheels, may be forced apart for threading wire into the machine, or are forced positively into engagement with the wire to be fed by the machine.

Collar 55 of eccentric 44 on shaft 30 (Figs. 1 to 4) carries an eccentric strap 148, which, through a rod 150, transmits motion to an arm 152. Arm 152 has a hub 154 through which a shaft 156 extends loosely. Shaft 156 is carried in bearings 158 (Figs. 7 and 8) formed in a bracket 160 which is secured to face 162 of wall 164. A sprocket 166 may be secured at one end of shaft 156 beyond hub 154. Sprocket 166 may serve as a spacing collar for retaining the shaft in proper relation to bearings 158, and also for other purposes hereinafter to be described.

A tape feed wheel 168 may be secured at the other end of shaft 156, and, with sprocket 166, serves to retain the shaft against lateral movement. Wheel 168 may have a knurled face 170 (Fig. 2) upon which a tape 172 (Figs. 7a and 8) having a beaded edge 174 is positioned for feeding. The wheel is cut away at one edge of the knurled face to provide a groove or recess 176 in which portions of elements 178, affixed to bead 174, may be received.

Arm 152 has a pin 180 (Figs. 1 and 3) fixed thereto. Upon pin 180 a finger 182 is provided a pivotal bearing. A spring 184 engaged between finger 182 and arm 152 serves to maintain ratchet tooth 186 of finger 182 in engagement with the

ratchet wheel 188, mounted on shaft 186 between hub 184 and one of bearings 188.

At a position between bearings 188, bracket 180 may be cut away (Figs. 7, 15 and 16). At that point, shaft 186 may have a collar 188 fixed to rotate therewith. A pair of straps 180 have their ends 182 fixed against a face 184 of bracket 180 so that arcuate portions 188 of the straps substantially encircle collar 188. A strip 200 of leather or similar frictional material may be retained by portions 188, in engagement with the face of collar 188 to apply braking action to shaft 186. Straps 180 may terminate in a pair of arms 202 through which a bolt 204 may be passed. A spring 208 retained between one arm 202 and suitable lock-nuts on bolt 204 produces adjustment and resiliency for the braking device. This braking device prevents reverse rotation of shaft 186 as tooth 186 moves reversely over wheel 188 after having rotated wheel 188 in the feeding direction.

In order to assure that the tape be fed positively, a brake shoe 208 (Figs. 1, 7 and 8) is resiliently pressed towards engagement with knurled face 170. Shoe 208 has a face 210 shaped to conform to the arcuate shaping of wheel 188; but face 210 is smooth. A rod 212, loosely pinned at 214 to shoe 208, is slidable through an opening 216 in a bracket arm 218. Arm 218 is secured to a bracket arm 220 extending upwardly from bracket 180. A spring 222 on rod 212 between arm 218 and shoe 208 causes the shoe to apply the desired pressure against the tape caught between faces 170 and 210.

A pin 224, fixed in rod 212 and engaged in a slot 226 in arm 218, prevents rotation of rod 212. A collar 228 (Figs. 8 and 45 to 48), affixed to the extending part of rod 212 beyond arm 218, has a face 230 including a cam projection 232. Projection 232 is formed to interlock with a recess 234 in a collar 236. Collar 236 is loose upon rod 212, and has a flat face 238 for abutment against arm 218, where it is held by the action of spring 222. A handle 240, secured to collar 236, provides means for rotating the collar upon rod 212, to move cam projection 232 to move out of recess 234. Thus rod 212 is moved against the action of spring 222 to release brake shoe 208 from engagement with wheel 188 whenever it is desired to adjust the tape upon the wheel, or to position a new length of tape.

Forming and attaching means E is constructed to permit easy and ready separation of an entire assembly, or for the separation of one or more units, so that repairs and replacements may be made easily without disturbing the rest of the apparatus. Top wall 242 (Figs. 7, 9, 21, 22, 35 and 36) of casting 14 is formed with a recess 244 for receiving a block 246. At the side of housing 92 adjacent block 246 (Figs. 12 and 53), wire 12 is fed towards the punch and die by wheels 94 and 98 immediately at the top face 248 of block 246. At this position, a plate 250 is secured to face 248, and has a groove 252 formed in its bottom face 254. Plate 250 extends towards wheels 94 and 98 away from block 246. Beneath extension 256 thus formed, a small plate 258 is secured in position to complete the groove 252. Grooves 108 and 252 are in alignment, and together serve to retain the wire properly for feeding.

Beyond plate 250, a pair of stripper plates 260 are secured in position on top face 248, and are capable of limited adjustment. Plates 290 are se-

slightly larger than screws 262. In this manner, limited adjustment of the plate edges 286 relatively to each other is made possible. Each edge 286 has a step 288; these steps are juxtaposed when the plates are assembled, and form a groove 270, in alignment with grooves 108 and 252, for receiving the wire as it is fed by the wire feeding means up to the position of the punch and die.

Reciprocating vertically with relation to block 246 is a ram 272 (Fig. 22) carried by a crosshead 274 (Figs. 5, 6 and 9). Ram 272 is slidable in ways 278 which are secured in a housing 278. Ways 278 are in the form of separate gibs which, by suitable securing means, are anchored in position in opposed corners of housing 278. Ways 276 have V-shaped grooves 280 to receive the V-shaped sides 282 of ram 272. Housing 278 is of a width to extend across recess 244 so that its footing 284 may be secured, by suitable means, to the top wall 242 of casting 14.

Ram 272 is secured to crosshead 274 by suitable securing means. The ends of crosshead 274 are formed with enlarged sections 286 having recesses 288 into which bearing pins 290 are received. Pins 290 are formed with heads 292, and are, in turn, received through the straps 294 (Fig. 9) at the ends of connecting rods 296. Set screws 298 lock pins 290 in place and thus hold straps 294 in proper relation to rock upon the pins in reciprocating the ram. Connecting rods 298 extend down into casting 14 through openings 300 in top wall 242 to eccentric straps 302 (Figs. 9 and 10), forming part of the connecting rods, which are received upon eccentrics 304 on shaft 30. Cover plates 305 may be provided at openings 300 to guard against foreign matter entering the chamber. A suitable flexible washer 307 may be fitted around each rod 298 to accommodate itself to the slight movement of the rod in sealing opening 300.

As shown, there is a rod 298 at each end of crosshead 274. Balanced forces are thus delivered to crosshead 274. Furthermore, the eccentricities of eccentrics 44 and 304 are small, being sufficient to obtain the small stroke necessary for the operation of the respective parts. Since wire or strip of relatively small thickness is utilized in these operations, only a small effective stroke of the ram is necessary. Thus, it has been made possible to perform these operations without massive cranks, of great stroke, but by small eccentrics of very small stroke. Furthermore, the centers of pins 290 are substantially perpendicularly above the center line of shaft 30. In the same manner, eccentric 44, and rod 150 actuated by that eccentric are disposed substantially perpendicularly vertically from shaft 30. Thus, substantially no off-center thrust results during the operation of the machine. Substantially all forces delivered are in substantially a single plane, torque is minimized, and vibration reduced to a minimum. Ram 272 and rod 150 move up and down substantially simultaneously and almost to the same degree, and vibrate substantially in that single plane, which also is the plane for the center-line of flywheel 34 the tendency of which is to absorb any of the vibration produced by any very slight lateral vibration.

The main body 306 of ram 272 takes the shape of a block having V-shaped edges 282 (Figs. 5 and 6). To body 306 is secured a ram block 308 (Figs. 22 and 23). A recess 310 (Figs. 21, 33, 34 and 56) is provided centrally of the front face 312 of block

cured on top of block 308 is a plate 316. Block 314 will be moved solidly up against the bottom face of plate 316 during the operation of the apparatus.

The manner in which punch block 314 is assembled with ram block 308, and the method of assembly and adjustment of punch 318 with relation to block 314, constitute means applicable to machinery such as here described for zipper manufacture as well as for general application for punch press operation. By the arrangement to be described, it is possible to change punches and dies without first taking apart substantially the entire apparatus.

Block 314 is formed with a recess 320. In this recess, punch 318 is snugly seated. In the instance illustrated, punch 318 (Figs. 56 to 61) is made up of two distinct sections 322 and 324. Section 324 is positioned at the bottom of recess 320, with section 322 abutting against it. Then a pair of clamp plates 328, anchored against face 312 of block 314, hold both sections against separation from block 314. Block 314 (Figs. 21, 33 and 34) is formed with a pair of slots 330 extending transversely of block 314 and opening into recess 320. In slots 330 and the upper portion of recess 320 is located a T-shaped end piece 332 of hardened metal. In leg 334 of piece 332 a pair of screws 336 and 338 are threadedly received, respectively to engage against ends of sections 322 and 324. These screws serve to determine the levels at which sections 322 and 324 cooperate with die block 340. A cut-out 342 is formed in plate 316 to make the ends of screws 336 and 338 accessible for adjustment.

The action of sections 322 and 324 against the work, together with such clamping action as is secured from clamp plates 328, serves to locate the punch vertically with relation to the ram. In addition, a slot 344 cut in a side face of block 314 may be brought into registry with a slot 346 in block 308 for the reception of a key 348. In this manner, blocks 308 and 314 are restrained against relative vertical movement. A pair of clamp plates 350 have flanges in engagement with clamp plates 328, and are themselves secured to block 308 by cap screws 351. Thus, block 314 is clamped securely in position; but, merely by releasing screws 351, the entire assembly of block 314 with both sections of punch 318 may be separated from ram block 308, and a new assembly substituted. Likewise, it is possible to adjust the position of sections 322 and 324 to a definite relationship to block 314, and, therefore, to their positions in relation to block 308 determined by the interlock of key 348 in slots 344 and 346, without first assembling these parts with the ram. In this manner, the time necessary for replacement of a punch for any reason is made of no consequence, and the necessity for taking the entire ram assembly apart for any such purpose is completely eliminated.

Sections 322 (Figs. 59 to 61) is cut away to form a groove 352. Then, at one end, further metal is ground away to leave a pair of guide pieces 354 extending from the section. These guide pieces are intended to interfit with a recess 356 (Figs. 26, 64 and 65) provided in die block 340 for guiding and locating the punch. Groove 352 is of the exact shape of edge 358, the cutting edge of the punch. Thus, as edge 358 wears away during the punching operation, section 322 may be ground away between guide pieces 354 to form a new edge for a substantial portion of the length of the punch. Relief for edge 358 is

provided by grinding section 322 away as shown at 360.

Section 324 has a squared end 360 to fit into a recess 362 in die block 340. A recess 364 is formed in end 360, to cooperate with a pin or projection 366 in die block 340. The effective level of end 360 with relation to pin 366 is determined by the position of screw 338. End 360 does no cutting, but merely upsets metal to form head 368 and recess 370 of a zipper element 178 (Fig. 20a) in the manner to be described. Opposite ends of section 324 (Fig. 58) are formed substantially identically. Thus, when one end wears out, clamp plates 328 are released, the punch removed from recess 320, section 324 is reversed, and the other end used. Screw 338 adjusts section 324 into desired relation to section 322 for cooperation with projection 366. Section 322 must pass entirely through the thickness of the metal to shear an element from the strip; section 324 merely applies sufficient pressure to form projection 366 from the metal. Thus, different times of engagement for these two punch sections are requisite. This timing is effected by adjustment of screws 336 and 338.

In order to maintain tape 172 in proper tension as it feeds to means E under the pull of wheel 188, a tension device 372 (Fig. 7) is assembled on face 182 at a groove 374 cut in face 182. A pair of blocks 376 and 378 are secured in groove 374 by suitable means. Block 378 is of such dimensions that its top face is just below a flange 380 below recess 244. Block 378 consists of an end member 382 seated in groove 374. A plate 384 is mounted at the outside face of member 382; plate 384 and member 382 are secured together and to casting 14 by suitable securing means. Slidable in passage 386 formed between plate 384 and groove 374 is a block 388, loosely held in passage 386, but propelled by a spring 390 retained between a follower 392 and block 388. Follower 392 is carried by a screw-threaded member 398 engaged in a threaded opening 400 in member 382 for adjusting the pressure applied by block 388 against the bead of tape caught between the ends 402 of blocks 376 and 388. A finger 404 may extend from block 388 for engagement by an operator to release engagement of the block against a tape edge.

Ends 402 (Figs. 54 and 55) are substantial duplicates. Block 378 is secured in position with relation to groove 374 by suitable securing means; block 388 is slidable against the action of spring 390; the operation of ends 402 is thus the same as if the two ends were movable relatively to each other for the purpose of varying the distance between them in placing the desired tension upon the tape as it is fed to the tape feeding wheel. Both ends 402 are formed with semi-cylindrical grooves 406 for the reception of bead 174. Also a pair of flat faces are provided for engagement against the tape proper. By adjusting member 398, the frictional force against the tape will be increased or decreased and the proper tension obtained.

Block 248 has a recess 408 formed immediately below the position of punch 318 (Figs. 21, 35, 64 and 65). Die block 348 is located in recess 408 and is held in place in the recess by clamps 410 which, by suitable securing means such as screw 416, are located and held in place against the front face of block 248. In such case, clamps 408 engage against the front faces of block 348 and force it firmly into recess 408. Then block

340 rests upon a platform 414 formed in casting 14 for that purpose.

The die block is made up of substantially identical, opposite sections 410, held together tightly by any desired clamping means, as, for instance, by a through screw 410. The die block as thus constituted has a recess 420. A pair of shoulders 422 in the top faces of sections 410 immediately at the contacted faces form a groove 424 which is located to align with grooves 108, 252 and 270. A stripper plate 420 is secured on top face 420 of block 340 to close groove 424, plate 420 extending up to the edge of recess 420.

Recess 420 receives snugly assembled pieces of hardened metal and retains them tightly in their appropriate association for location in relation to punch 318. These pieces are keyed in such manner that, by tightening sections 410 by means of screw 410, the parts are rigidly and accurately located. One of these pieces is a T-shaped section 440 which is interfitted with a portion of the recess so that it is held against any movement. It has a face 442 at the same level as the bottom of groove 424. It terminates together with the shaping of other inset pieces to form recess 356 with which the guide pieces 354 cooperate. Just short of end 444 of face 442, raised projection 368 is formed. This projection cooperates with recess 304 so that, when the ram depresses them into cooperating relation, they produce upset recess 370 and head 368 in the wire.

Grooves 446 may be provided on bottom faces 448 of plates 280, and continue beneath plate 426. These grooves are directed so that air from an airline 450, which makes connection with the inlet to the passage formed by the grooves 446, will be delivered just at about the position where this upsetting operation is taking place. Air under compression for such operation may be supplied constantly to the machine throughout the operation, and will serve the purpose of cooling the upsetting punch section and projection 368 throughout the operation.

The front faces of sections 410 are formed so that, when mated, a V-shaped groove 452 is presented, and leads into a very narrow slot 454. This groove and slot, when the die block is properly assembled, are aligned to cooperate with the groove between ends 402. Held securely in recess 420 immediately at the end of slot 454, is die piece 458. A curved edge 458 formed on this piece provides cutting cooperation with edge 358. Die piece 458 likewise has a cylindrical groove 460 located immediately behind slot 454, to receive the bead of the tape during the operation of the apparatus, and to locate the bead positively with relation to wire being fed. A projection or pilot 482, having substantially the contour of projection 368, may be provided upon face 464 of piece 458. Pilot 482 serves to locate the wire end as the operation of forming and severing an element proceeds.

Face 464 is at a level above face 442. Thus, the cutting off of an element at edge 458, that is, the shearing of the metal, will have commenced and even be finished, before the formation of head 368 and recess 370 will have been commenced, effecting, among other things, reduction in the force required to be delivered by ram 272 and crosshead 274. Wire is fed up to the position of pin or projection 368. Between pin 288

in the wire. Then the wire, by successive steps, is fed to a position where its first recess registers with and seats upon pilot 482. When so located, the end of the wire will have taken the form shown in Figs. 17 and 68, where a preceding section will have been severed by the action of the punch and die at edges 350 and 458. Thus it will have a pair of jaws or legs 468 which, by the action of the feeding mechanism, will be caused to straddle bead 174 of the tape. The spacing between projection 308 and pilot 462 is merely sufficient to compensate for the thickness of metal required for sections 322 and 324. It has been found that the distance for forming three heads 368 is all that is required for this purpose. Possibly stronger metal for use in cutting tools will reduce this spacing.

As shown in Figs. 17 and 18, the shaping of section 322 at cutting edge 358 and of the cooperating cutting edge 458 is such that legs 466 will have a curved portion 467 and straight edge end portions 468 substantially perpendicular to the side edges 471 which are defined by the edges of strip 12. A small angular cut 473 may connect portions 467 and 468 to prevent breaking of the punches and dies. This, in turn, will produce a round edge 475 for the bead end of element 178 having straight cut faces 477, leading out to edges 471, with connecting angular corners 479.

To complete the formation of the element and its attachment to the tape, the punch descends, and edge 368 cooperates with edge 468. When edge 358 engages against the wire to shear it, the cut end of the wire must move downwardly, leaving the cut away element 178 upon the die face at pilot 482. When the punch recedes and separates from the die, the wire must move back to a proper level so that, at the next movement of feeding wheels 84 and 96, it may feed into position onto pilot 462. For that purpose, a wire return member 486 is provided to move vertically within recess 358. Member 468 is substantially of identically the same shape as the opening of recess 358, including the shaping of edge 458. Member 468 includes a column 470 having a groove 472 to fit around the portion of piece 458 whose shape produces edge 458. The column is cut away to form a pair of shoulders 474 which cooperate with walls of the recess in receiving guide pieces 354. The section of column 470 which protrudes beyond shoulders 474 includes a flat face 476 to coincide with face 464, and a bevelled face 478. The latter, when member 468 is at its uppermost position, provides a cam edge from the level of face 442 to the level of face 464.

As the punch is assembled, guide pieces 354 are engaged in recess 368 around column 470 just above shoulders 474. The wire will have been upset at a previous operation. The end, fed forward, is moved upward along face 478 until the end recess 370 coincides with pilot 462. The punch descends, cutting off an element between edges 358 and 458. However, the end of the wire is moving downwardly, and presses against face 476 to move member 468 downwardly. Then the punch recedes.

It is now necessary that member 468 return to its first position, with face 476 at the level of face 464. For this purpose, column 470 has a foot 480 at its lower end. A pin 482 having a head 484 is positioned to engage against foot 480. Pin 482 extends down through a member 486 and into a

within cavity 408 bears against the enlarged head 484, and against the bottom of cavity 408, thus tending to move pin 482 and member 488 upwardly. Pin 482 is limited in its movement by the engagement of head 484 with member 488. Member 488 is screw threaded to engage the threads formed in the walls of cavity 408. In this manner, adjustment of the upward limit of movement of pin 482 and, therefore, of member 488, may be effected.

The cutting off operation may be completed before jaws 468 have been clamped upon the tape bead, or these operations may even be timed to be substantially simultaneous. It has been found desirable that the operation of clamping jaws 468 to the tape edge be completed substantially before the cutting off step proceeds. In this manner, when the legs of the element have been clamped upon the tape edge, there is no necessity for controlling that element by holding it by any part of the machine during the stages of cutting off, as the element remains firmly attached to the tape.

For this purpose, block 308 is provided with a pair of recesses 484 adjacent its side edges (Fig. 21). In each of these recesses is positioned a cam plate 488. Plate 488 has a slot 500 through which may extend suitable clamping screws 502 which engage through plate 488 into block 308. Plates 488 are thus adjustable relatively to block 308. At their lower ends, plates 488 are provided with hardened cam faces 504 (Figs. 43 and 44). At their top ends, screws 508, threaded through plate 318, bear against each of plates 488 to hold them in properly adjusted position.

A pair of openings 508 are formed in block 248 to cooperate with the side walls of recess 244. A clamp blade guide 510 is located with relation to each cam plate 488 by engagement of a lug 512 (Figs. 21, 22, 37 and 38) formed as a projection from the bottom of a clamp blade housing 514. Thus, housing 514 is restricted against movement relatively to block 248 and base 14. A lock 516 is seated upon block 248 with a pair of overhanging fingers 518 straddling housing 514. Suitable securing means fixes lock 516 to block 248 and retains housing 514 against separation from block 248.

Housing 514 has a groove 520 in which slides leg 522 of a clamp blade 524 (Figs. 39 and 40) part of which is of T-shaped cross-section. The cross-bar 526 of the blade is positioned between end faces 528 of stripper plates 280 and unrelied wall portions 530 of housing 514 on either side of groove 520. A pin 532 extends laterally from the blade and into a slot 534. A spring 536 is seated in slot 534 between pin 532 and end face 535 of slot 534, and is retained in the passage formed between lock 516 and leg 522, to drive blade 524 to a normal position where the engaging portions 540 of the blades will be moved away from each other, the position where they would engage an element to clamp it upon the tape.

When the punch descends for the cut-off of the element, guide pieces 354 are positioned in recess 356. Edge 358 cooperates with edge 458 in effecting the cut-off. In the manner set forth, recess 364 cooperates with projection 306 to upset recess 370 and head 380 in the wire. Just before these operations are effected, however, cam ends 584 will engage cam ends 542 on clamp blades 524. This operation will serve to drive blades 524 towards each other and the extending legs 486 on the wire, driving those legs towards and clinching them around bead 174.

As shown in Figs. 30 to 32, ends 546 of clamp blades 524 have two clamping sections 546 and 548. Between them is a gap 550. As shown in Fig. 32, clamping sections 546 are positioned to engage legs 486 as they are still open around the tape bead, and preferably before the element has been separated from the wire. The shaping of sections 546 for this purpose is shown in Fig. 31.

A complex face 552 is provided for obtaining the first bend of the metal. This shaping may have to be changed in accordance with the resiliency or softness of the metal. The particular faces being considered were designed in connection with a low resiliency steel strip or wire. In connection with metal such as brass or copper, the angularities will have to be revised in accordance with the response of the metal to the clamping action. In this particular case, only the portion of section 546 indicated by face 552 will engage legs 486. Face 552 bends the metal of the legs, particularly as shown in Figs. 19 and 67. At the same time, face 556 strikes the legs and makes a slight indentation in forcing the legs firmly home against the tape. Thus the final result of the action of section 546 is to leave a corner 554 as the leg is bent from its original cut shape. As portion 558 of face 552 is at an angle of about 15° to the perpendicular to the end face of blade 524, and as it engages against the ends of legs 486, very slow closing or bending of the member will result until that slowly bending leg is hit by portion 556.

The action of the blades, as depicted in Figs. 18, 19 and 32, at this stage serves to bend the jaws into the shape shown in Figs. 19 and 67 without substantial decrease of the cross-section of the metal across portion 556. Corner 554, the corner 562 of Fig. 18, is left protruding, as the element is cut out of the continuous, parallel edged wire or strip such as used in this operation, without any scrap. Face 560 of section 548 extends beyond portion 556. Thus its action is an additional driving or closing action in finally driving the legs home, and smashing or swedging the metal of corners 554 into the body of the legs. First, however, section 322 completes the cutting off of the element, and the result is as shown in Fig. 68.

In the further operation illustrated, the wire is fed one or more, preferably two, steps after sections 546 have functioned, so that elements 178 will not be worked upon by blades 524, as assured by gap 550. Then faces 560 strike the element at corners 554. The result is a condensation of the metal in corners 554 into substantially flat faces 564; but now the density of metal in legs 486 has been increased because of the additional metal. At the same time, the legs have been stretched lengthwise across the width of the tape. Opening 566, in Fig. 20, has been reduced in its extent, and legs 486 now tightly clamp the bead of the tape, and also are tightly clamped against the body of the tape. An element made in this manner serves to produce a slide fastener which is strong so that the elements may not be pulled off the tape, and yet provides the desired shape for efficient operation of a substantially standard slider over the fastener elements. Such elements permit facility in operating the slider around curved portions of a slide fastener.

It is sometimes desirable to form gaps in stringers 10 for proper assembly of sliders and stops for separation of slide fasteners of predetermined length. For this purpose, a gap mechanism G

(Figs. 62 and 63) may be associated with the apparatus. Sprocket 166, previously referred to, may form a part of such mechanism. Such sprocket may carry a chain 668. One of the links 570 of the chain may have a pin 572 extending laterally therefrom. The length of chain 668 is such that, at a definite position, determined by the rotation of shaft 156 necessary to feed a predetermined length of tape 172, pin 572 will engage against a cam plate 574. Where the machine is to be used for producing zippers of various predetermined lengths, chains 668 of various lengths may be positioned on sprocket 166. Where the machine is designed, in relation to ratchet wheel 188 and tape feed wheel 168, to feed a definite amount of tape for each revolution of shaft 156, and such length is the length of a zipper to be produced, pin 572 may be affixed directly to sprocket 166.

In any case, cam plate 574 is secured at the end of an arm 576 pivoted at 578 upon a bracket 580 secured to bracket 160. A spring 582 extends between an extension of arm 576 and bracket 580 to move cam plate 574 towards sprocket 166. A stop 584 of suitable design may be formed or secured to bracket 580 to limit arm 576 in its movement under the action of spring 582. When pin 572 engages plate 574, arm 576 is swung away from the sprocket and functions to close a switch 586.

Arm 576 carries a leaf spring 588 the position of which, by means of an adjusting screw 590, is adjustable relatively to arm 576 and a button 592 extending from switch 586. Thus, for the length of time cam plate 574 is engaged by pin 572, button 592 will be depressed to close a circuit through switch 586. The circuit, from a power source 594, includes an electromagnet 596 which may be mounted on wall 48 of casting 14. Armature 598 for the electromagnet may be retained suitably for movement towards the pole pieces of electromagnet 596. By a suitable connection 600, which may be a rod or other member pivotally or flexibly connected to armature 598 and a pin 602 carried upon an extension 604 from arm 52, the electromagnet, when energized, is made effective to rotate arm 52 about pin 50 and lift roller 58 off cam ring 49. Thus, feeding of strip 12 is interrupted. The feed of tape 172 proceeds as before. The ram continues to reciprocate; however, since no metal is being fed, no elements are formed, and none are clamped upon the tape. Gaps are thus produced at regular intervals.

Many other changes could be effected in the particular device and product designed, and in the method of operation set forth, and in specific details thereof, without substantially departing from the invention defined in the claims, the specific description being merely of operative embodiments capable of illustrating certain principles of the invention.

I claim:

1. Slide fastener stringer manufacturing apparatus including means for feeding a tape into a predetermined position, means for feeding a metallic member towards that position, and means immediately at that position for performing all operations upon the fed member to form slide fastener elements from the fed member and to attach the elements to the fed tape directly from the fed member, the feeding means including a base, a shaft carried by the base, a ram, and cooperating means carried wholly by the ram and

and cutting elements from the member and attaching the elements to the tape.

2. Slide fastener stringer manufacturing apparatus including means for feeding a tape into a predetermined position, means for feeding a metallic member towards that position, and means immediately at that position for performing all operations upon the fed member to form slide fastener elements from the fed member and to attach the elements to the fed tape, the forming means including a base, a shaft carried by the base, a ram, a pair of eccentrics of small eccentricity spaced apart on the shaft, rods extending from the eccentrics to each side of the ram, and cooperating means carried by the ram and the base and actuated entirely by the ram for forming and cutting elements from the member and attaching the elements to the tape.

3. Slide fastener stringer manufacturing apparatus, including means for feeding a tape into a predetermined position, means for feeding a metallic member towards that position, and means immediately at that position for performing all operations upon the fed member to form slide fastener elements from the fed member and to attach the elements to the fed tape, the forming means including a base, a shaft carried by the base, a pair of eccentrics of small eccentricity spaced apart on the shaft, a ram, a pair of connecting rods carried by the eccentrics, the connecting rods extending substantially vertically from the eccentrics to each side of the ram and having slight lateral movement during reciprocation by the eccentrics, and cooperating means carried wholly by the ram and the base for forming and cutting elements from the member and attaching the elements to the tape.

4. Slide fastener stringer manufacturing apparatus, including means for feeding a tape into a predetermined position, means for feeding a metallic member towards that position, and means immediately at that position for performing all operations upon the fed member to form slide fastener elements from the fed member and to attach the elements to the fed tape, the forming means including a base, a shaft carried by the base, a plurality of eccentrics of small eccentricity spaced apart on the shaft, a ram, a pair of connecting rods extending from a pair of the eccentrics to each side of the ram for reciprocating the ram, a connecting rod extending from one of the eccentrics for driving the tape feeding means, all of the connecting rods extending substantially vertically from the respective eccentrics and having slight lateral movement during reciprocation by the eccentrics, and cooperating means carried wholly by the ram and the base for forming and cutting elements from the member and attaching the elements to the tape.

5. In punch press construction, a base having a recess formed therein, a die block fitted into said recess and retained therein, a ram retained for movement towards and away from the die block, a punch block fixed to the ram, the punch block having a recess formed therein, means to form a wall at one end of the recess, the die block having a recess immediately below the recess in the punch block, a punch-retaining member clampingly retained in the recess in the punch block to position punches retained thereby towards and away from the recess in the die block, and a die-piece-retaining member clampingly locked in the recess in the die block and

punches, the punch-retaining member and the die-piece-retaining member being separable from the press without disturbing the relation of the ram and the punch block or the relation of the ram to the base or the relation of the die block and the base.

6. In punch press construction, a base having a recess formed therein, a die block fitted in said recess and fixed with relation to the base, a ram supported for movement towards and away from the die block, a punch block fixed to the ram, the punch block having a recess formed and extending substantially vertically therein and opening at the front face of the block, means to form a wall at the top end of the recess, the die block having a recess immediately below the recess in the punch block and opening at the front face of the block, a punch-retaining member clampingly retained in the recess in the punch block to position punches retained thereby towards and away from the recess in the die block, and a die-piece-retaining member clampingly locked in the recess in the die block and having means for interrelation with said punches, the punch-retaining member and the die-piece-retaining member being separable from the press without disturbing the relation of the ram and the punch block or the relation of the ram to the base or the relation of the die block and the base.

7. In punch press construction, a base having a recess formed therein, a die block fitted in said recess and fixed with relation to the base, a ram supported for movement towards and away from the die block, a punch block fixed to the ram, the punch block having a recess formed and extending substantially vertically therein and opening at the front face of the block, means to form a wall at the top end of the recess, the die block having a recess immediately below the recess in the punch block and opening at the front face of the block, a punch-retaining member, the punch-retaining member being slid into position through the open front of the recess and being then clampingly retained in the recess in the punch block to position punches retained thereby towards and away from the recess in the die block, and a die-piece-retaining member clampingly locked in the recess in the die block and having means for interrelation with said punches, the punch-retaining member and the die-piece-retaining member being separable from the press without disturbing the relation of the ram and the punch block or the relation of the ram to the base or the relation of the die block and the base.

8. In punch press construction, a base having a recess formed therein, a die block fitted in said recess and fixed with relation to the base, a ram supported for movement towards and away from the die block, a punch block fixed to the ram, the punch block having a recess formed and extending substantially vertically therein and opening at the front face of the block, means to form a wall at the top end of the recess, the die block having a recess immediately below the recess in the punch block and opening at the front face of the block, a punch-retaining member clampingly retained in the recess in the punch block to position punches retained thereby towards and away from the recess in the die block, and a die-piece-retaining member, the die-piece-retaining member being slipped into position through the open end of the recess in the die block and being then clampingly locked in the recess in the die block, the die-piece-retaining means having means for interrelation with said

punches, the punch-retaining member and the die-piece-retaining member being separable from the press without disturbing the relation of the ram and the punch block or the relation of the ram to the base or the relation of the die block and the base.

9. In punch press construction, a base, a shaft carried by and extending transversely of the base, a housing supported on and extending transversely of the base above and having a plane substantially common with a plane passing through the center-line of said shaft, a ram movable in the housing and relatively to the base, eccentrics carried by the shaft, a crosshead fixed to the ram, and means connecting the eccentrics to the ends of the crosshead for reciprocating the ram with relation to the base, the plane of reciprocation of the ram being substantially the common plane of the shaft and the crosshead, and the connecting means moving substantially in the common plane.

10. In punch press construction, a base comprising a hollow housing, a shaft extending through the housing and transversely of the base, a ram housing supported on and extending substantially vertically from the base, a crosshead, a ram carried by the crosshead and movable in the ram housing relatively to the base, and means extending through the housing from the shaft to the crosshead for reciprocating the ram in the ram housing with relation to the base.

11. In punch press construction, a base comprising a hollow housing, a shaft extending through the housing and transversely of the base, a ram housing supported on and extending substantially vertically from the base, a crosshead, a ram carried by the crosshead and movable in the ram housing relatively to the base, and means extending through the housing from the shaft to the crosshead for reciprocating the ram in the ram housing with relation to the base, the ram reciprocating vertically in a path directly vertically above the shaft.

12. In punch press construction, a base comprising a hollow housing, a shaft extending through the housing and transversely of the base, a ram housing supported on and extending substantially vertically from the base, a crosshead, a ram carried by the crosshead and movable in the ram housing relatively to the base, and means extending through the housing from the shaft to the crosshead for reciprocating the ram in the ram housing with relation to the base, the ram reciprocating vertically in a path directly vertically above the shaft and the reciprocating means extending substantially vertically from the shaft to the crosshead.

13. In apparatus for forming slide fastener stringers, the apparatus including a base, a ram reciprocable towards and away from the base, means for feeding a substantially uniform metallic strip between the reciprocable ram and the base, means for feeding a tape past the end of the fed strip, the ram and the base having complementary means for forming and separating a slide fastener element from the fed strip, a pair of jaws on the base, the jaws being disposed on either side of the tape and being slidable towards each other for engaging and closing the element upon the edge of the tape, and cams carried by the ram, the cams and the jaws having cam faces brought into direct engagement on downward movement of the ram to drive the jaws into engagement with the element to close it upon the edge of the tape.

14. In apparatus for forming slide fastener stringers, the apparatus including a base, a ram movable with relation to the base, means for feeding a substantially uniform continuous metallic strip between the ram and the base, means for feeding a tape past the end of the fed strip, the ram and the base having complementary means for forming and separating a slide fastener element from the fed strip, a pair of jaws on the base, the jaws being disposed on either side of the tape and being slidable towards each other for engaging and closing the element upon the edge of the tape, and means on the ram for engaging the jaws to drive them into engagement with the element to close it upon the edge of the tape at the same time that the complementary means is forming and separating an element from the strip.

15. Apparatus for producing slide fastener stringers, including means for feeding a tape past an assembly position, means for positioning the legs of a slide fastener element astride the tape edge, a ram, the ram having means for engaging the element on movement of the ram in one direction, and clamping members actuated by the ram on movement in that direction for closing the legs of the element upon the tape edge.

16. Apparatus for producing slide fastener stringers, including means for feeding a tape past an assembly position, means for positioning the legs of a slide fastener element astride the tape edge, clamp blades movable toward and away from the tape, means on the blade for effecting a plurality of closing impacts with each leg to drive the leg into engagement with the tape edge, and means for driving the blades to impart closing impacts to the legs.

17. Apparatus for producing slide fastener stringers, including means for feeding a tape past an assembly position, means for positioning the legs of a slide fastener element astride the tape edge, clamp blades movable toward and away from the tape, means on the blade for effecting a plurality of closing impacts of different degree with each leg to drive the leg into engagement with the tape edge, and means for driving the blades to impart closing impacts to the legs.

18. Apparatus for producing slide fastener stringers, including means for feeding a tape past an assembly position, means for positioning the legs of a slide fastener element astride the tape edge, clamp blades movable toward and away from the tape, means on the blade for effecting a plurality of successive closing impacts of increasing force with each leg to drive the leg into engagement with the tape edge, and means for driving the blades to impart closing impacts to the legs.

19. Apparatus for producing slide fastener stringers, including means for feeding a tape past an assembly position, means for positioning the legs of a slide fastener element astride the tape edge, clamp blades movable toward and away from the tape, each blade having a plurality of faces for impacting a fastener leg, the faces being related so that progressively increasing impact will be delivered by a succeeding face to drive the leg into engagement with the tape edge, and means for driving the blades to impart closing impacts to the legs.

20. Apparatus for slide fastener manufacture, comprising a ram, a base, means for effecting relative movement of the ram and the base, and means removably carried by the ram and the base

for forming slide fastener elements from stock fed past the ram and for attaching the elements to tape fed past the ram, the forming means, the ram and the base being formed to permit the forming means to be removed from the association by movement transversely of the direction of said relative movement.

21. Apparatus for slide fastener manufacture, comprising a ram, a base, means for effecting relative movement of the ram and the base, and means removably carried by the ram for forming slide fastener elements from stock fed past the ram, the forming means and the ram being formed to permit the forming means to be removed from the association by movement transversely of the direction of said relative movement.

22. Apparatus for slide fastener manufacture, comprising a ram, a base, means for effecting relative movement of the ram and the base, and means for forming slide fastener elements from stock fed past the ram, the ram and the forming means being constructed for assembly of the forming means with and separation of the forming means from the ram, the forming means and the ram being formed to permit the assembly and separation by movement of the forming means into and out of association with the ram transversely of the direction of said relative movement.

23. Apparatus for slide fastener manufacture, comprising a ram, a base, means for effecting relative movement of the ram and the base, the ram having a recess opening transversely of the direction of said relative movement, and means removably positioned in the recess for forming slide fastener elements from stock fed past the ram, the forming means and the recess being formed to permit the assembly and separation of the forming means and the recess by movement of the forming means into and out of the recess transversely of the direction of said relative movement.

24. Apparatus for slide fastener manufacture, comprising a ram, a base, means for effecting relative movement of the ram and the base, the ram having a recess opening from a side wall thereof, and means removably positioned in the recess for forming slide fastener elements from stock fed past the ram, the forming means and the recess being formed to permit the assembly and separation of the forming means and the recess by movement of the forming means into and out of the recess transversely of the direction of said relative movement.

25. Apparatus for slide fastener manufacture, comprising a ram, a base, means for effecting relative movement of the ram and the base, the ram having a recess opening from a side wall thereof, a block seated in the recess and removably held against movement forwardly out of the recess, the block having a recess opening in the same direction as the ram recess, and means removably held in the block recess, said means comprising means for forming slide fastener elements from stock fed past the ram, the block and the ram recess being formed to permit the block and the forming means to be assembled as a unit with or with or to be separated as a unit from the ram recess transversely of the direction of said relative movement.

26. Apparatus for slide fastener manufacture, comprising a ram, a base, means for effecting relative movement of the ram and the base, the ram having a recess opening from a side wall thereof, a block seated in the recess and removably held against movement forwardly out of the

recess, the block having a recess opening in the same direction as the ram recess, and a plurality of metal working members snugly seated in abutting relation in the block recess, the members being slidable with relation to each other and the block, the members comprising means for forming slide fastener elements from stock fed past the ram, the block and the ram recess being formed to permit the block and the members to be assembled as a unit with or to be separated as a unit from the ram recess transversely of the direction of said relative movement.

27. Apparatus for slide fastener manufacture, comprising a ram, a base, means for effecting relative movement of the ram and the base, the ram having a recess opening from a side wall thereof, a block seated in the recess and removably held against movement forwardly out of the recess, the block having a recess opening in the same direction as the ram recess, and a plurality of metal working members snugly seated in abutting relation in the block recess, the members being slidable with relation to each other and the block, means carried by the block adjustably to fix the positions of the members with relation to the block, the members comprising means for forming slide fastener elements from stock fed past the ram, the block and the ram recess being formed to permit the block and the members to be assembled as a unit with or to be separated as a unit from the ram recess transversely of the direction of said relative movement.

28. Apparatus for slide fastener manufacture, comprising a ram, a base, means for effecting relative movement of the ram and the base, the ram having a recess opening from a side wall thereof, a block seated in the recess and removably held against movement forwardly out of the recess, the block having a recess opening in the same direction as the ram recess, and a plurality of metal working members snugly seated in abutting relation in the block recess, the members being slidable with relation to each other and the block, means carried by the block adjustably to fix the positions of the members with relation to the block and to each other, the members comprising means for forming slide fastener elements from stock fed past the ram, the block and the ram recess being formed to permit the block and the members to be assembled as a unit with or to be separated as a unit from the ram recess transversely of the direction of said relative movement.

29. In punch press construction, a base, a shaft, ways positioned on the base, a crosshead, eccentrics carried by the shaft, a ram carried by the crosshead and slidable in the ways, the crosshead being positioned free of and extending beyond the ways, and means connecting the eccentrics to the crosshead extensions for reciprocating the ram with relation to the base, the crosshead and the ram reciprocating in a plane substantially including the shaft, the connecting means moving substantially in said common plane.

30. In punch press construction, a base, a shaft, eccentrics carried by the shaft, ways positioned on the base, a crosshead disposed substantially vertically above the shaft, a ram carried by the crosshead and slidable in the ways, the crosshead being positioned free of and extending beyond the ways, and means connecting the eccentrics to the crosshead extensions for reciprocating the ram with relation to the base, the crosshead and the ram reciprocating in a plane substantially in-

cluding the shaft, the connecting means moving substantially in said common plane.

31. In punch press construction, a base, a shaft, a ram movable relatively to the base, means actuated by the shaft for reciprocating the ram with relation to the base, a punch block carried by the ram, the block having a recess formed therein and extending substantially the entire extent of the block in the direction of movement of the ram, a punch holder seated snugly in the recess, the punch holder having a recess extending substantially the entire extent of the holder in the same direction as the recess in the block, and a punch nested in the punch holder recess.

32. In apparatus for forming slide fastener stringers, the apparatus including a base, a ram movable with relation to the base, means for feeding a substantially uniform metallic strip to the ram, means for feeding a tape in a fixed path in the path of movement of the fed strip, means comprising means slidable on the base and engageable by means on the ram for closing elements on the edge of the tape, and means carried by the ram for forming an element in the strip and for separating an element from the strip, the closing means and the forming and separating means being made effective during the same stroke of the ram in one direction.

33. In apparatus for forming slide fastener stringers, the apparatus including a base, a ram movable with relation to the base, means for feeding a substantially uniform metallic strip to the ram, means for feeding a tape adjacent the ram, means comprising means engageable by means on the ram for closing elements on the edge of the tape, and means for forming an element in the strip and for separating an element from the strip on movement of the ram in one direction, the closing means being energized by the ram during movement of the ram in said direction.

34. In apparatus for forming slide fastener stringers, the apparatus including a base, a ram movable with relation to the base, means for feeding a substantially uniform metallic strip to the ram, means for feeding a tape adjacent the ram and in the path of movement of the fed strip, means comprising means engageable by means on the ram for closing elements on the edge of the tape, and means for forming an element in the strip and for separating an element from the strip on movement of the ram in one direction, the closing means being energized by the ram during movement of the ram in said direction.

35. In apparatus for forming slide fastener stringers, the apparatus including a base, a ram movable with relation to the base, means for feeding a substantially uniform metallic strip to the ram, means for feeding a tape in the path of movement of the fed strip, means comprising means slidable on the base and engageable by means on the ram for closing elements on the edge of the tape, and means for forming an element in the strip and for separating an element from the strip on movement of the ram in one direction, the closing means being energized by the ram during movement of the ram in said direction.

36. In apparatus for forming slide fastener stringers, the apparatus including a base, a ram movable with relation to the base, means for feeding a substantially uniform metallic strip to the ram, means for feeding a tape in the path of movement of the fed strip, means comprising means slidable on the base and engageable by

means on the ram for closing elements on the edge of the tape, and means carried by the ram for forming an element in the strip and for separating an element from the strip on movement of the ram in one direction, the closing means being energized by the ram during movement of the ram in said direction.

37. Slide fastener stringer manufacturing apparatus, including means for feeding a tape in a fixed path past a predetermined position, means for feeding a metallic member toward that position, and means immediately at that position for performing all operations upon the fed member to form slide fastener elements from the fed member and to attach the elements to the fed tape directly from the fed member, the forming means including a base, a ram, means for reciprocating the ram, and cooperating means carried by the ram and the base and actuated entirely by the ram for forming portions of elements in the member including legs at the end of the member, the feeding means moving the member to place the legs astride the fed tape, and the cooperating means comprising means for cutting an element from the member and for attaching the element to the tape as the legs of the element integrally formed in the member are extended astride the fed tape.

38. Slide fastener stringer manufacturing apparatus, including means for feeding a tape into a predetermined position, means for feeding a metallic member toward that position, and means immediately at that position for performing all operations upon the fed member to form slide fastener elements from the fed member and to attach the elements to the fed tape, the forming means including a base, a shaft, a ram, eccentrics of small eccentricity on the shaft, rods extending from the eccentrics to the ram, and cooperating means carried by the ram and the base and actuated entirely by the ram for forming portions including legs of elements in the member, the feeding means moving the member to place the legs astride the fed tape, and the cooperating means comprising means for cutting an element from the member and for attaching the element to the tape as the legs of the element are extended astride the fed tape.

39. In apparatus for forming slide fastener stringers, the apparatus including a base, a ram movable with relation to the base, means for feeding a substantially uniform metallic strip between the ram and the base, means for feeding a tape in a fixed path past the end of the fed strip, the ram and the base having complementary means for forming and separating a slide fastener element from the fed strip, means slidable on the base immediately at the position of the separating means and disposed on either side of the tape for closing the element upon the edge of the tape as it is separated from the strip, and means on the ram for directly engaging the slidable means to drive them into engagement with

the element to close it upon the edge of the tape.

40. In apparatus for forming slide fastener stringers, the apparatus including a base, a ram movable with relation to the base, means for feeding a substantially uniform metallic strip between the ram and the base, means for feeding a tape in a fixed path past the end of the fed strip, the ram and the base having complementary means for forming and separating a slide fastener element from the fed strip, a pair of jaws on the base immediately at the position of the separating means, the jaws being disposed on either side of the tape and being slidable toward each other for engaging and closing the element upon the edge of the tape as it is separated from the strip, and means on the ram for engaging the jaws to drive them into engagement with the element to close it upon the edge of the tape, the jaws and the jaw engaging means having cam faces for direct engagement.

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Certificate of Correction

Patent No. 2,437,793.

March 16, 1948.

DAVID SILBERMAN

It is hereby certified that errors appear in the printed specification of the above numbered patent requiring correction as follows: Column 17, line 64, claim 1, and column 18, line 4, claim 2, after the syllable "ratus" insert a comma; column 22, line 67, claim 25, strike out the words "with or"; column 25, line 20, claim 37, for "partitions" read *portions*; and that the said Letters Patent should be read with these corrections therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 18th day of May, A. D. 1948.

[SEAL]

THOMAS F. MURPHY,
Assistant Commissioner of Patents.

PLAINTIFF'S EXHIBIT No. 13

G. Sundback Patent No. 1,467,015

Filed July 10, 1919

Patented Sept. 4, 1923



Sept. 4, 1923.

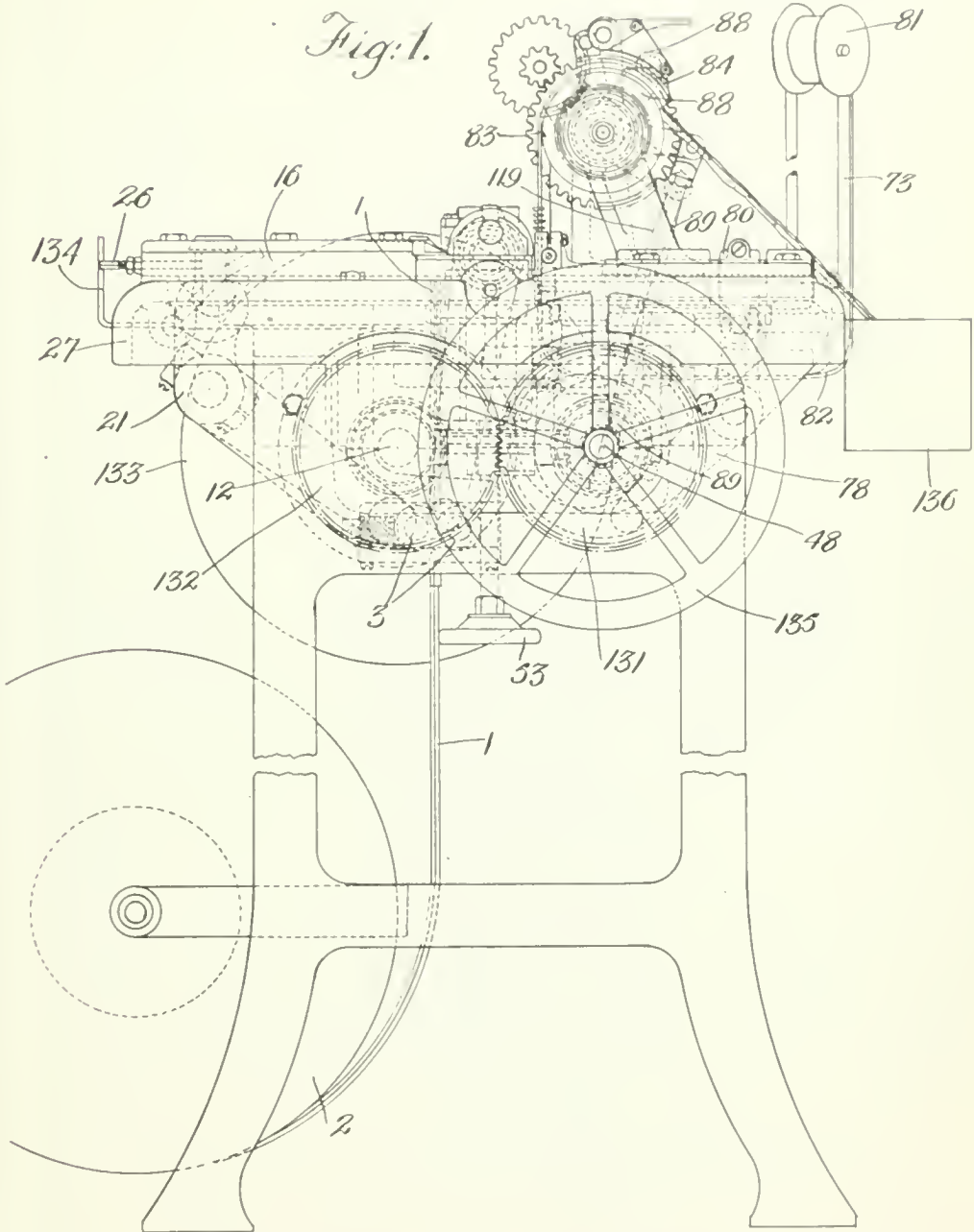
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G. SUNDBACK

METHOD AND MACHINE FOR MAKING FASTENERS

Filed July 10, 1919

14 Sheets-Sheet 1



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Sept. 4, 1923.

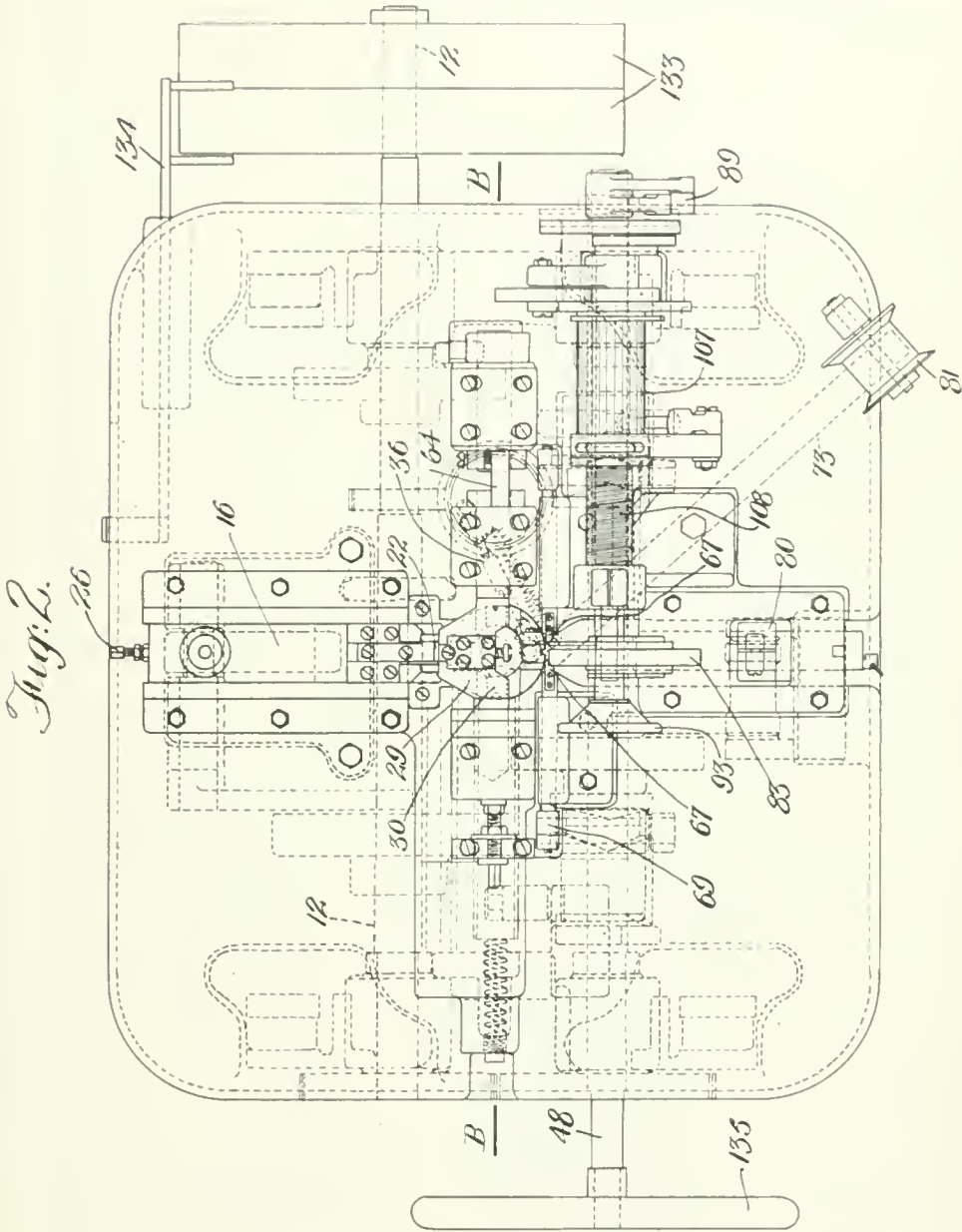
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METHOD AND MACHINE FOR MAKING FASTENERS

Filed July 10, 1919

14 Sheets-Sheet 2



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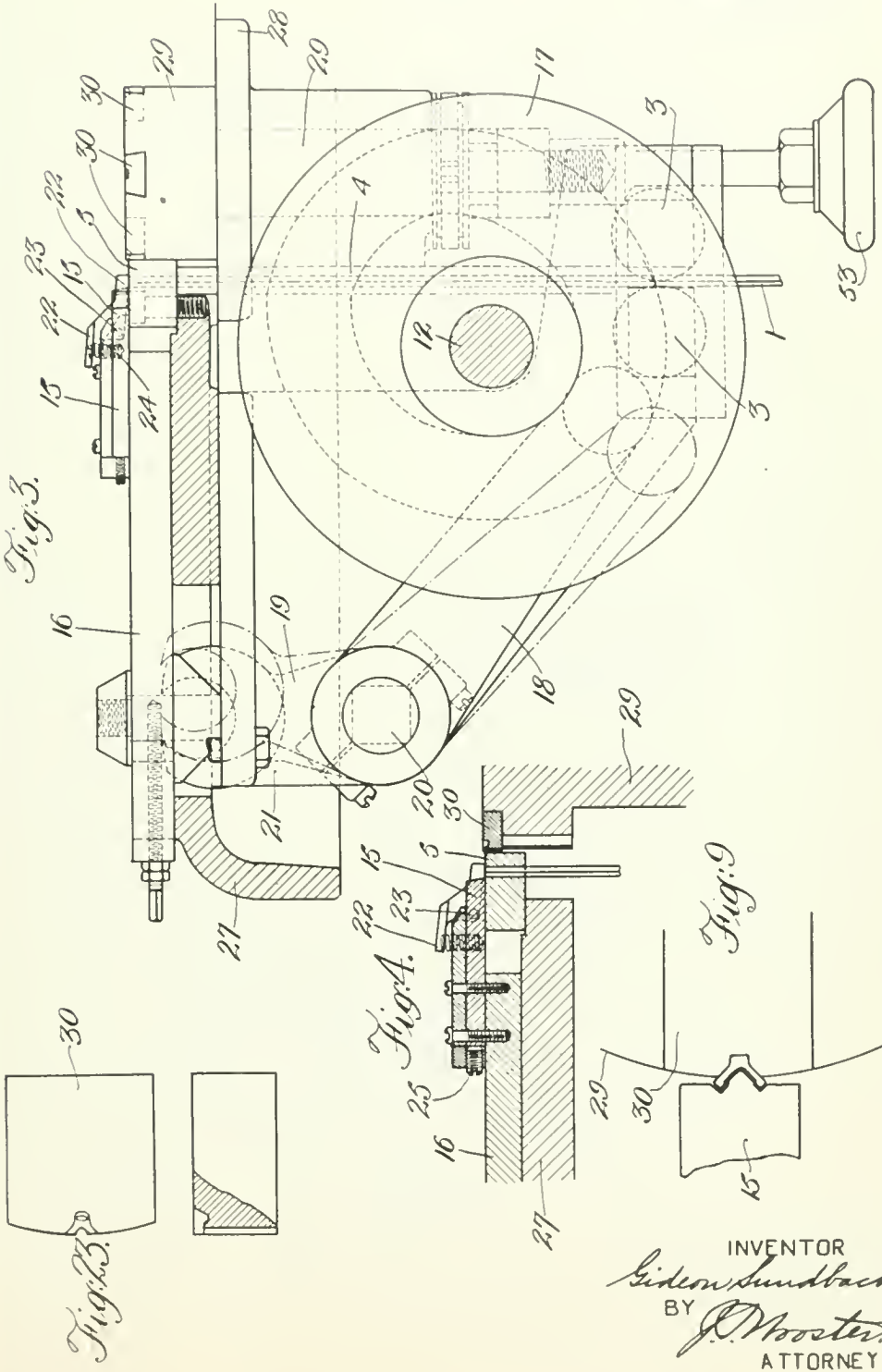
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METHOD AND MACHINE FOR MAKING FASTENERS

Filed July 10, 1919

14 Sheets-Sheet 3



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METHOD AND MACHINE FOR MAKING FASTENERS

Filed July 10, 1919

14 Sheets-Sheet 4

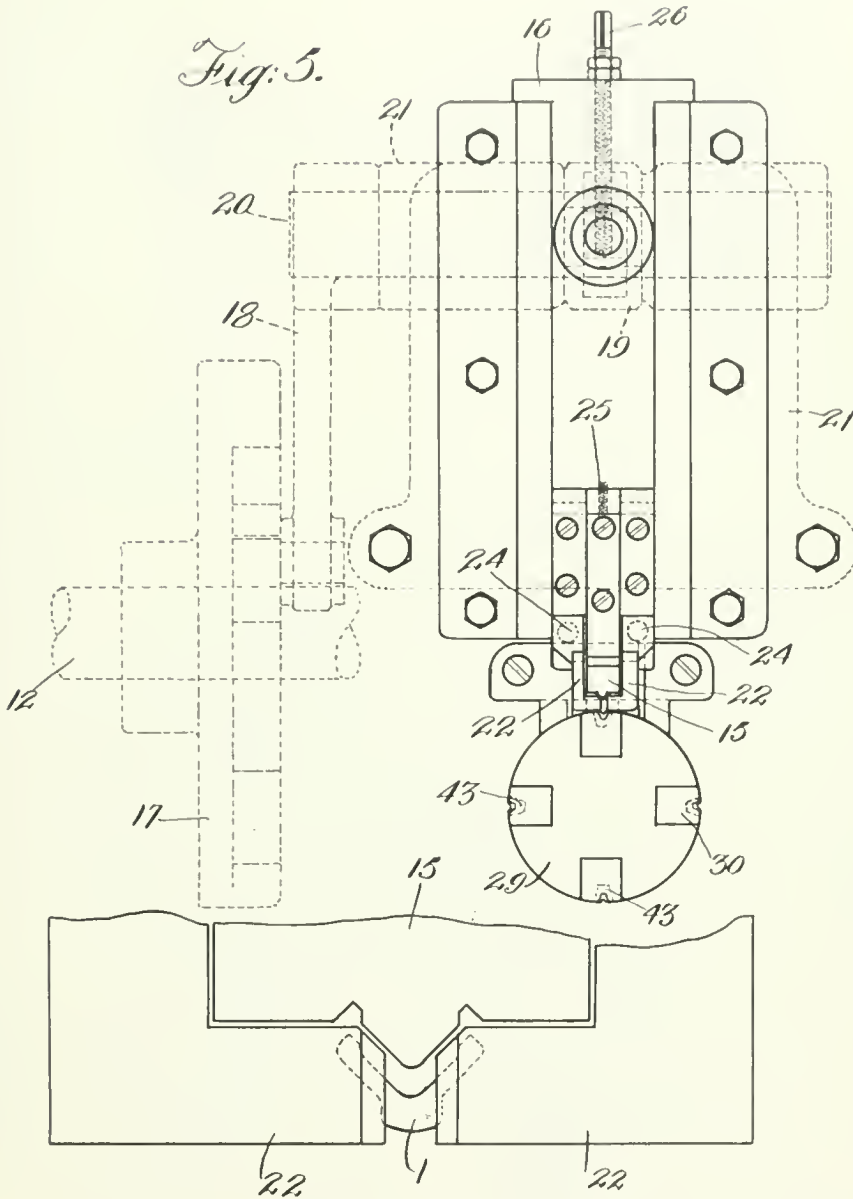


Fig. 5.

Fig. 6.

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METHOD AND MACHINE FOR MAKING FASTENERS

Filed July 10, 1919

14 Sheets-Sheet 5

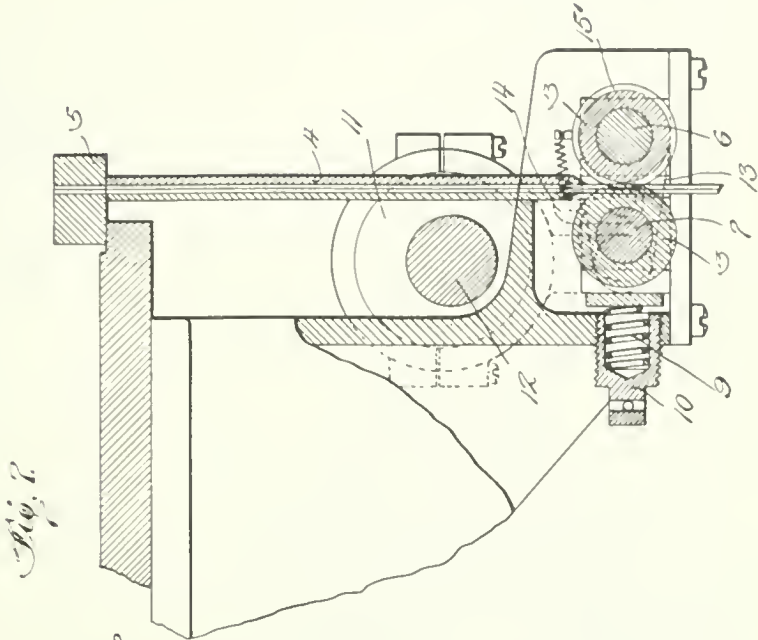


Fig. 8.

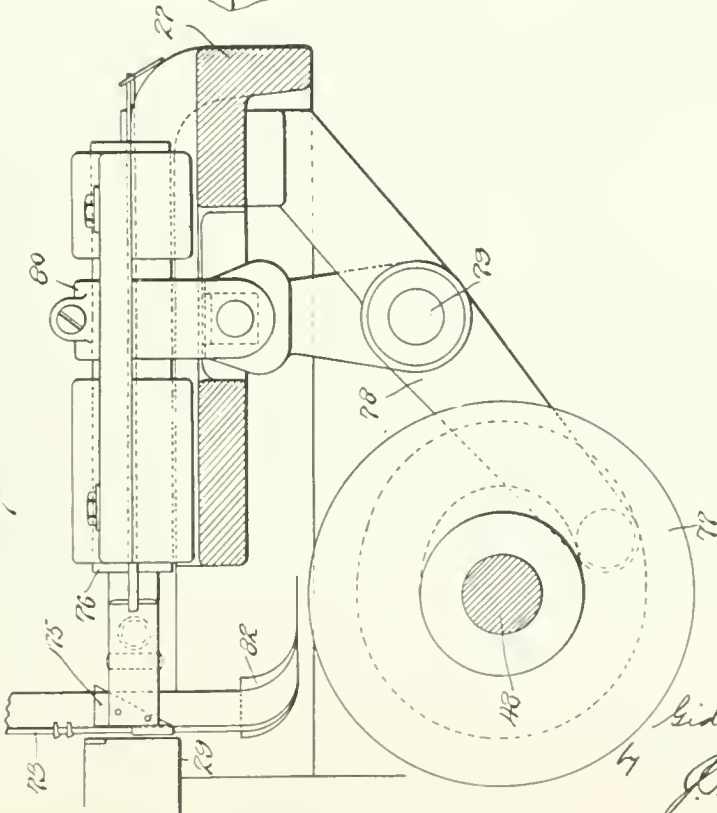


Fig. 10.

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1,467,015

G. SUNDBACK

METHOD AND MACHINE FOR MAKING FASTENERS

Filed July 10, 1919

14 Sheets-Sheet 6

Fig. 8.

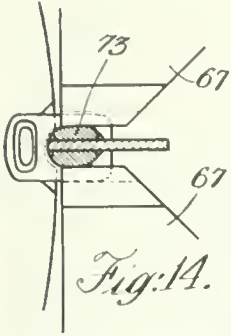


Fig. 14.

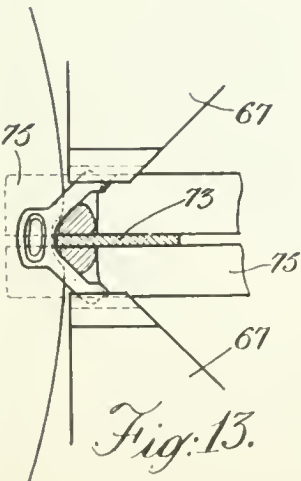
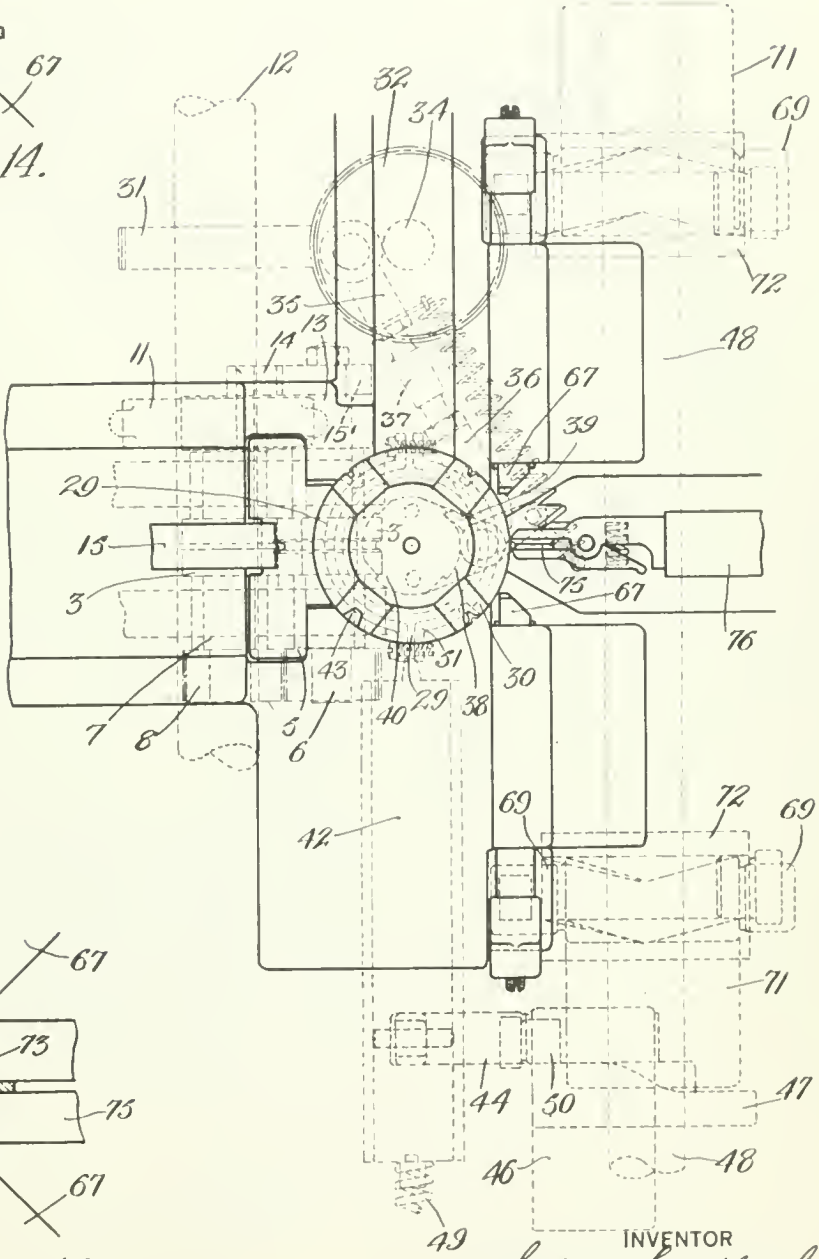


Fig. 13.

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1,467,015

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METHOD AND MACHINE FOR MAKING FASTENERS

Filed July 10, 1919

14 Sheets-Sheet 7

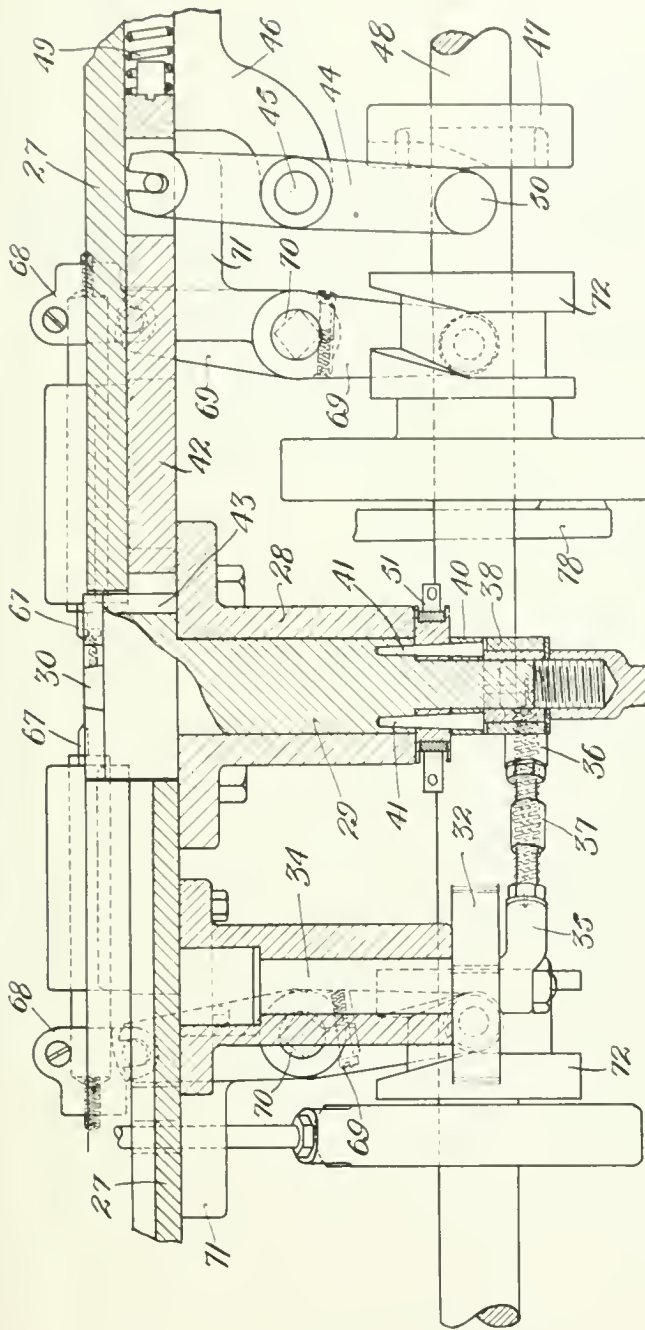


Fig. 10.

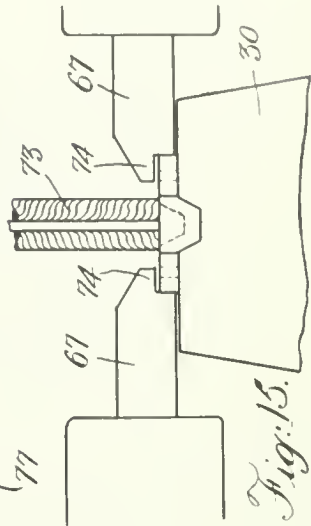


Fig. 15.

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Sept. 4, 1923.

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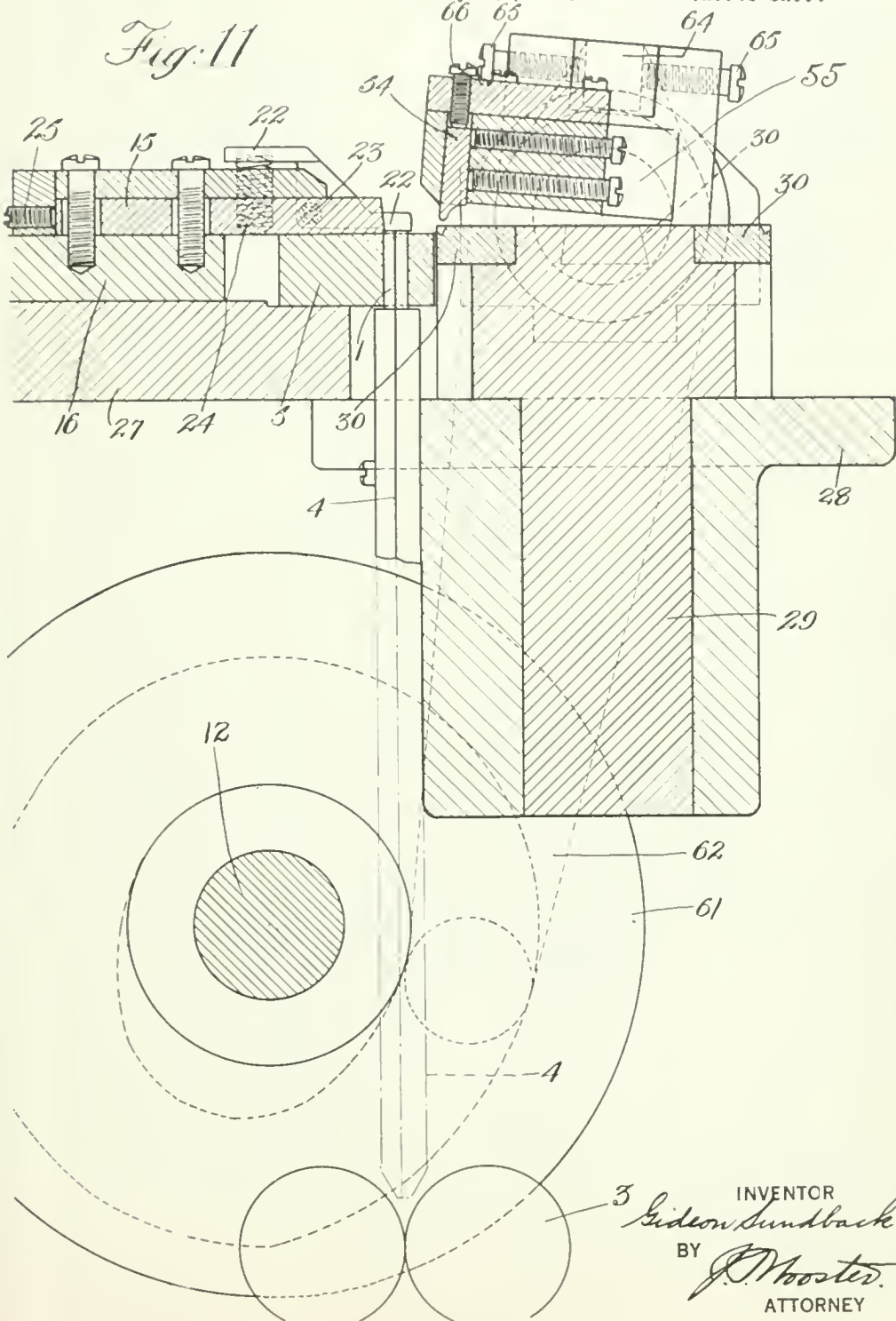
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METHOD AND MACHINE FOR MAKING FASTENERS

Filed July 10, 1919

14 Sheets-Sheet 8

Fig. 11



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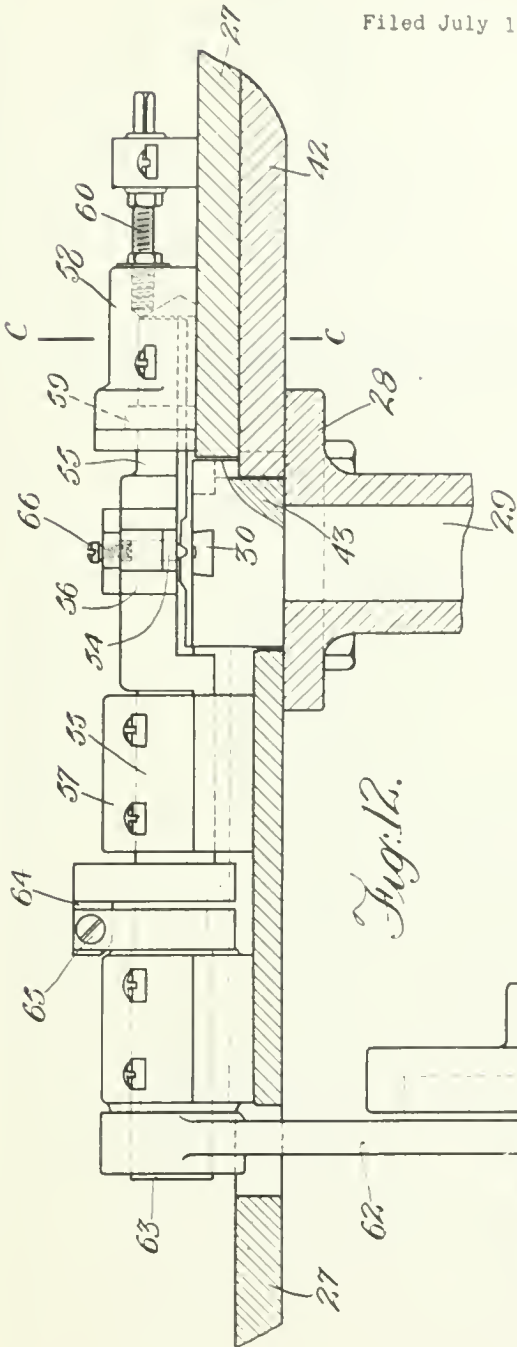


Fig. 12.

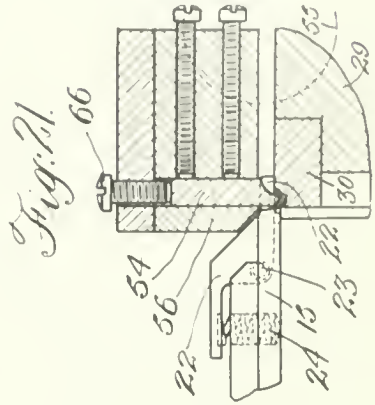


Fig. 21.

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Filed July 10, 1919

14 Sheets-Sheet 10

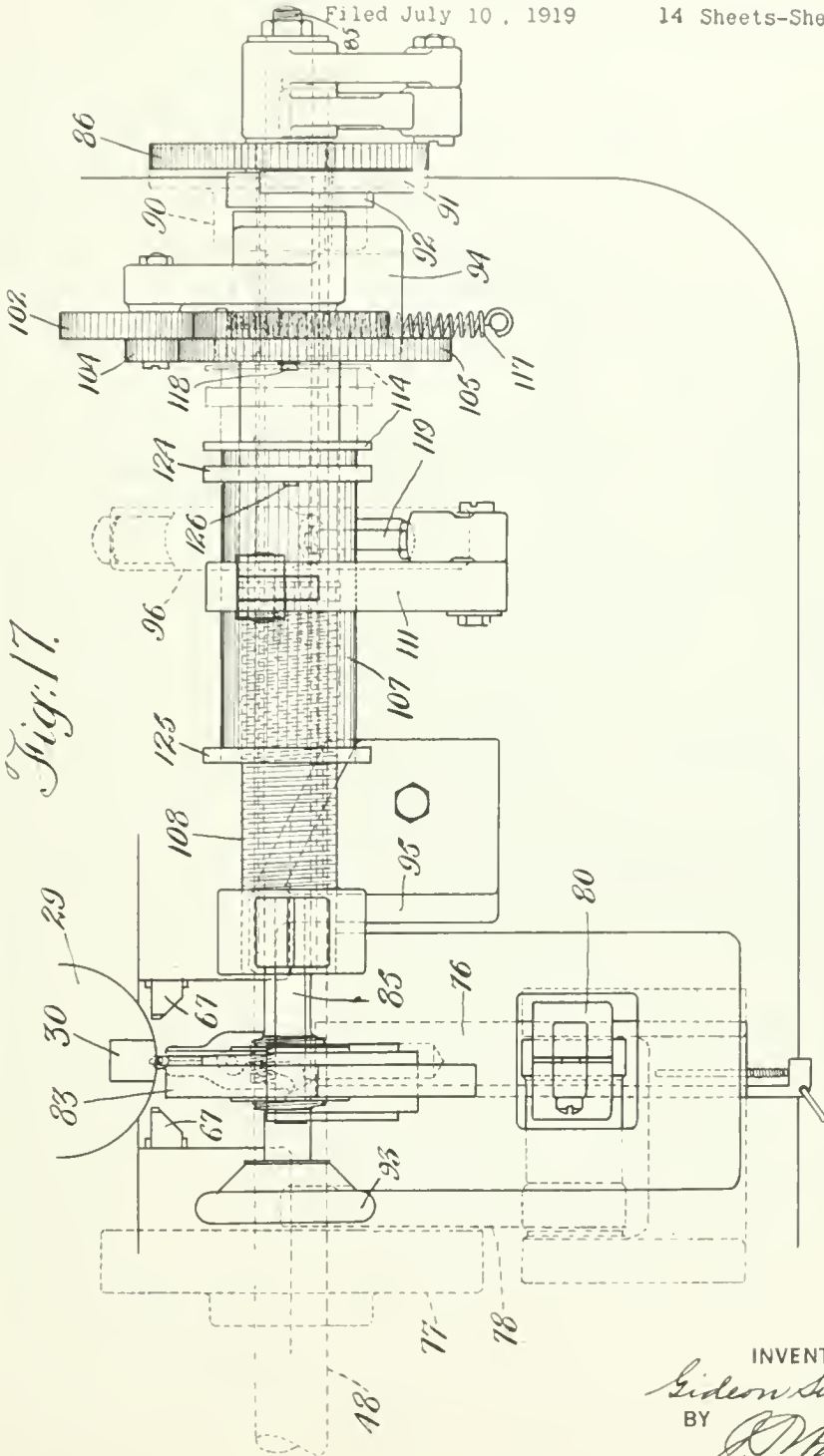


Fig. 17.

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Sept. 4. 1923.

1,467,015

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METHOD AND MACHINE FOR MAKING FASTENERS

Filed July 10, 1919

14 Sheets-Sheet 11

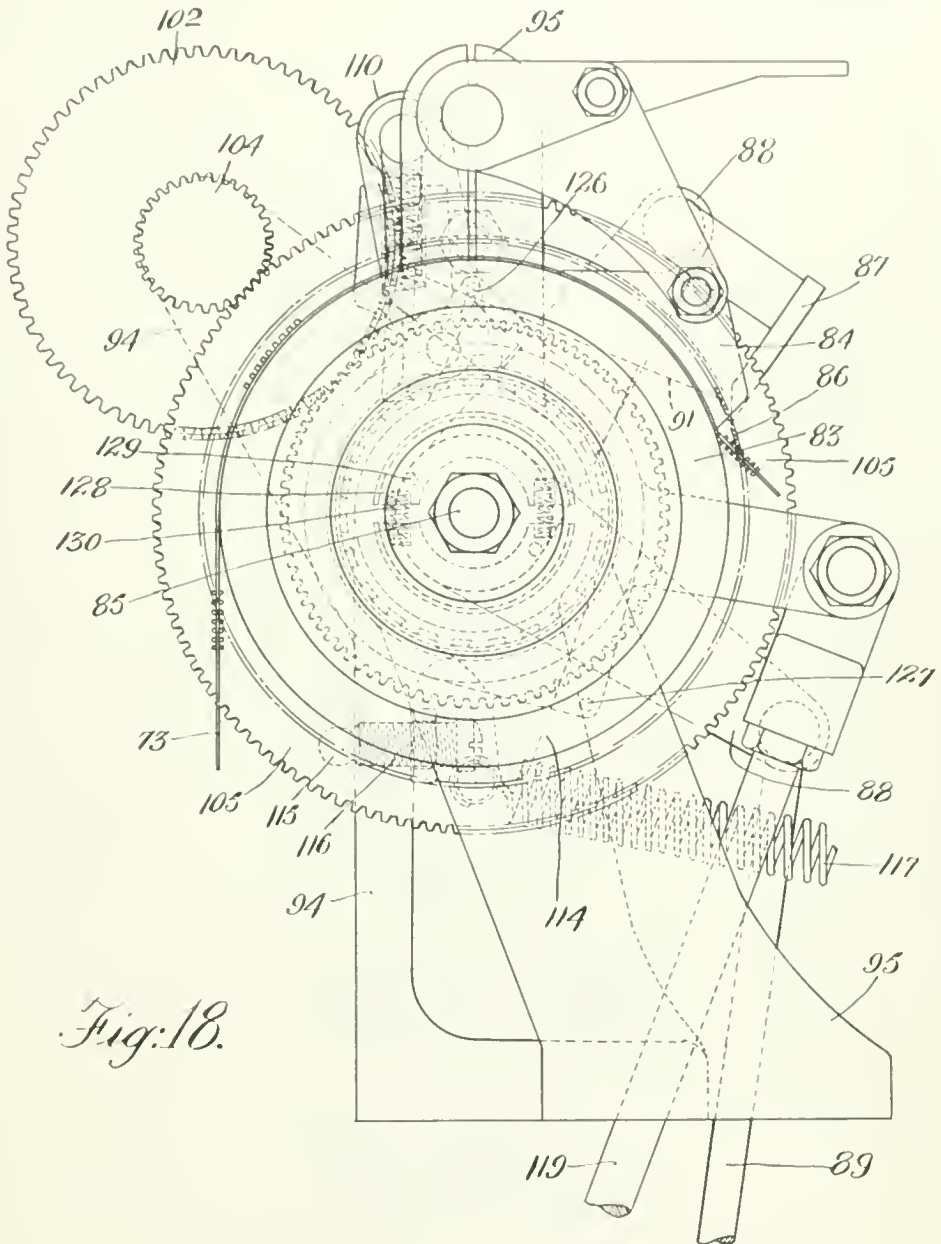


Fig. 18.

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METHOD AND MACHINE FOR MAKING FASTENERS,

Filed July 10, 1919

14 Sheets-Sheet 13

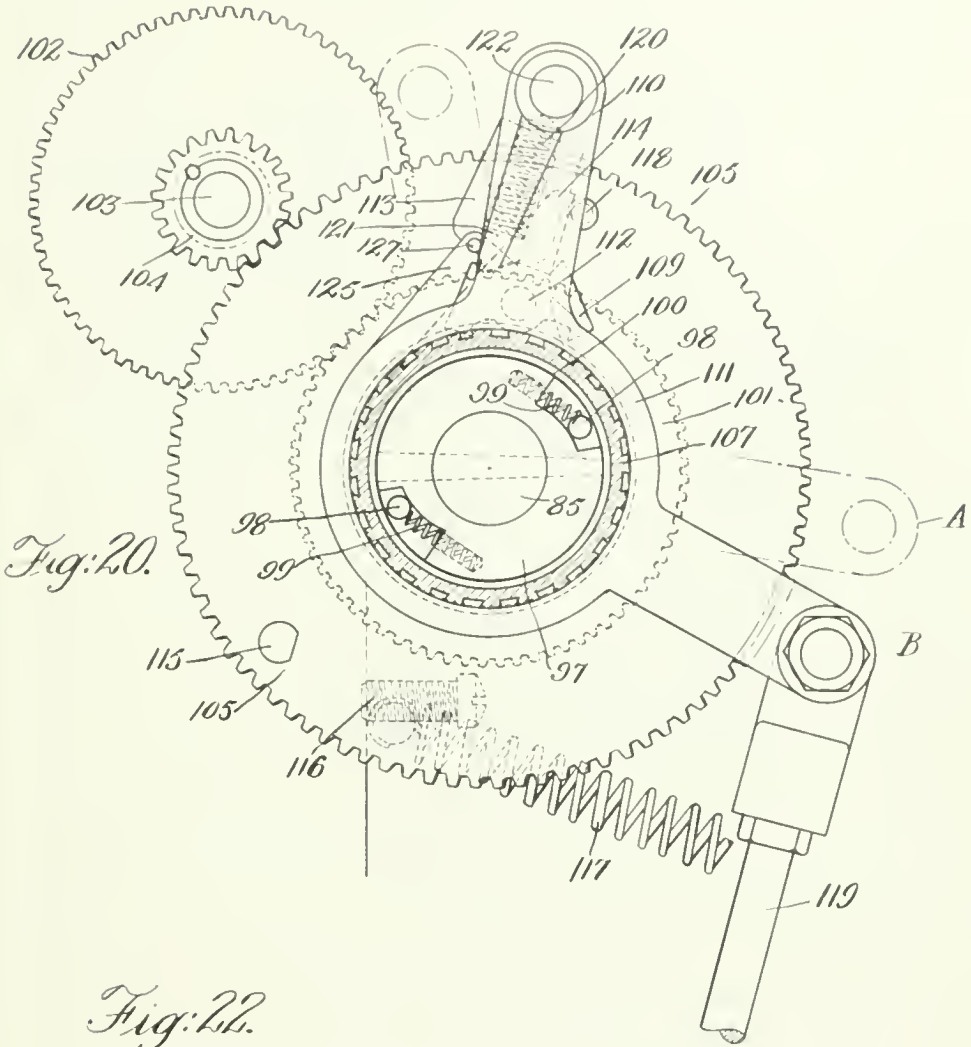
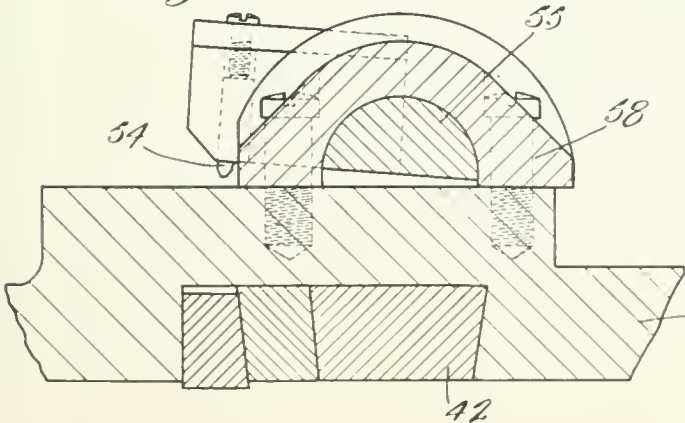


Fig: 20.

Fig: 21.



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Sept. 4, 1923.

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G. SUNDBACK

METHOD AND MACHINE FOR MAKING FASTENERS

Filed July 10, 1919

14 Sheets-Sheet 14

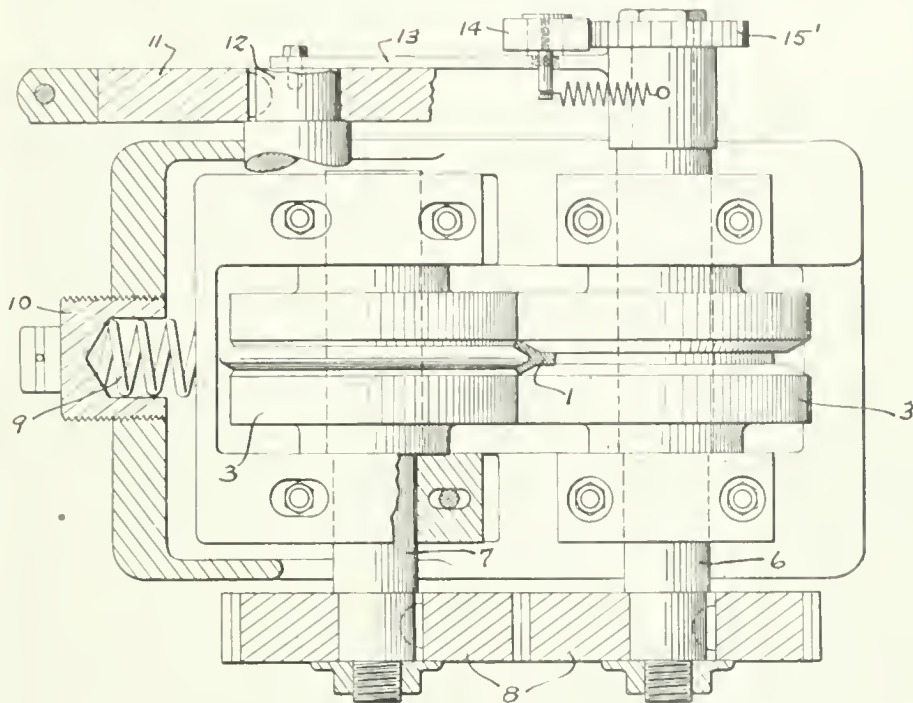


Fig. 24

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UNITED STATES PATENT OFFICE.

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METHOD AND MACHINE FOR MAKING FASTENERS.

Application filed July 10, 1919. Serial No. 309,935.

To all whom it may concern:

Be it known that I, GIDEON SUNDBACK, a subject of the King of Sweden, and a resident of Meadville, in the county of Crawford and State of Pennsylvania, have invented certain new and useful Improvements in Methods and Machines for Making Fasteners, of which the following is a specification.

This invention relates to a machine for shearing, forming and setting metallic pieces, and has particular reference to a special form of automatic machine with blank feeding means whereby small pieces are severed or sliced off a metallic strip of predetermined cross sectional shape, formed as by a die, and then set on a carrying element, without at any time losing control of the small pieces.

The machine illustrated herein is intended for making the fastener members shown in my Letters Patent No. 1,219,881, dated March 20, 1917, and affixing them to the corded fabric tape shown therein. The fastener member blanks consists of a body carrying separated jaws, and provided with a recess on one side and a head on the other, these respective recesses and heads being arranged on a pair of tape stringers so as to alternately interlock through a slider mounted on both stringers.

The machine of the present invention has for one of its objects to shear blanks from a strip of metal of predetermined Y cross section substantially that of the finished article, and to perfectly form the recess and head without distortion by the provision of a positive support on all sides of the blank while the forming is done.

In producing a fastener such as described in said patent, extreme accuracy and uniformity in the members themselves is required, and also in the spacing on the stringers, in order that the fastener as a whole will function properly. Also it is desirable to obtain maximum strength in the fastener members with a minimum of material, which is accomplished by first determining the desired cross section of the blank strip to give the minimum practicable width, and then the thickness of the blank for the desired rigidity of the jaws.

Another object is the elimination of all waste or scrap in the manufacture.

Another object is the elimination of delicate blanking tools whereby greater productive capacity at an equal speed is obtained and the expense for the upkeep of the machine is reduced.

Still another object is the positive setting of an accurately predetermined number of fasteners accurately spaced upon a carrying element, such as the stringer of the aforesaid patent.

And still another object is to provide a machine in which the thickness of the members can be varied to permit of an increased strength when desired. Such variation is not possible in a machine punching the members out of the flat stock, for the thickness of the strip suitable for punching is limited, and there is higher cost of operation due to wear of punches, etc., and waste of material.

Referring to the accompanying drawings and to the various views and reference signs appearing thereon:

Fig. 1 is an end view of the machine.

Fig. 2 is a plan view.

Fig. 3 is a sectional view showing details of the cutting punch slide.

Fig. 4 is a sectional detail of the cutting punch slide as shown in Fig. 3.

Fig. 5 is a top view of the cutting punch slide.

Fig. 6 is an enlarged view of the cutting punch and pressure plates.

Fig. 7 is a sectional view showing details of the metal feed.

Fig. 8 is a detail top view.

Fig. 9 is an enlarged top view showing a fastener member positioned in the forming die.

Fig. 10 is a sectional side view on line B—B in Fig. 2.

Fig. 11 is a sectional end view showing forming tool details.

Fig. 12 is a sectional side view on line B—B showing the operation of forming punch.

Fig. 13 is a detail top view of a fastener member in position to be clamped on the tape.

Fig. 14 is the same view showing the clamping operation completed.

Fig. 15 is a side view of Fig. 13.

Fig. 16 is a sectional end view showing horizontal tape slide details.

55
60
65
70
75
80
85
90
95
100
105

Fig. 17 is a top view showing tape feeding mechanism.

Fig. 18 is an end view of tape feeding mechanism,

5 Fig. 19 is a sectional side view of tape feeding mechanism.

Fig. 20 is a sectional end view showing details of the tape feed.

Fig. 21 is sectional end view showing forming tool details at the moment forming is completed.

Fig. 22 is a section on line C—C Fig. 12.

Fig. 23 is an enlarged view of the forming die.

15 Fig. 24 is a detail plan view of the feed roll mechanism shown in Fig. 7.

In carrying out my invention I feed, as by friction rolls, a metallic strip of special alloy of predetermined cross section through a guide to shear or slice off blanks by means of a reciprocating knife having edges that somewhat conform to the section of the strip. The cutting knife carries spring plates that hold the cut blank against the knife to enable the knife to feed the blank to a revoluble set of forming dies, which form a recess on one side and a head on the other, while supported on all sides to prevent distortion. The forming die which still retains the formed blank is then rotated away from the knife to a position where the jaws of the formed member can be clamped to a carrier or a tape. The tape is synchronously fed and carries the set member away from the die. The feed of the tape is also periodically varied to form regular spaced groups each of a predetermined number of members, ready to be severed to form the pairs of stringers constituting each fastener.

Referring to Figs. 6, 7 and 8, 1 is a wire of channel shaped cross section, usually of non-rusting alloy, and so rolled or drawn as to have the sides of the channel of such section as to constitute the jaw members of the fastener members without any further operation thereon. This wire unwinds from reel 2, Fig. 1, and is fed step wise by friction rolls 3 through the guide 4 and cutting die 5. The rolls 3 are grooved to fit the shape of the wire and are mounted on shafts 6 and 7 and connected by gears 8. The friction between the rolls and the wire is adjusted by the pressure of spring 9 through the screw 10. The movement of the rolls is effected by the eccentric 11 on shaft 12 oscillating the rocker 13 pivotally mounted on shaft 6 and carrying the pawl 14. The latter acts on the ratchet 15' also mounted on shaft 6 and thereby effects an intermittent movement of the metal strip 1. The amount of this feed constitutes the thickness of a fastening member blank and is predetermined in proportion to the spacing of such members on the tape and to the

required strength of the jaw members, and can be readily changed where desired without involving waste.

Referring to Figs. 3, 4 and 5, 15 is a cutting or shearing knife with its cutting edge preferably shaped to partially conform to the blank strip 1. This knife is mounted on slide 16, mounted on table 27 and is moved back and forth by cam 17 on shaft 12 through levers 18 and 19, both of which are fastened to shaft 20 rocking in bracket 21. The strip blank 1, is so positioned relatively to the knife 15 that the latter cuts from the jaw end toward the body end for the purpose of not distorting the jaws in cutting, and also so that the jaws will be in proper relation to the tape when clamped, without requiring the blank member to be turned around, and without getting out of control. Attached to extensions of slide 16 on each side of knife 15 are spring plates 22 pivoting on 23 constituting a presser foot mechanism, and acted on by compression springs 24. The knife 15 is adjusted laterally by set screw 25, Figs. 5 and 11, in desired proximity to plates 22, see Fig. 6, and retains its position relatively to the plates during the forward and back movements of the slide 16. The slide 16 has the adjusting screw 26.

Referring to Figs. 8 and 10, revolving in the bracket 28 and table 27 is the column 29 which carries the forming dies 30. The spiral gear 32 on shaft 34, driven by spiral gear 31 on shaft 12, acts as a crank plate and through the studs 35 and 36 connected by turnbuckle 37 reciprocates the rocker arm 38. The latter carries pawl 39 which acts on the ratchet 40 fastened by pins 41 to the column 29. As the spiral gear 32 revolves the pawl 39 catching in the teeth of ratchet 40 intermittently revolves the column 29 and brings in rotation the forming dies 30 into the positions illustrated in Fig. 5.

Referring to Figs. 8, 10 and 5, 42 is a slide mounted in the table 27 with its front end shaped to fit into a slot 43 in column 29. This slide is operated through the lever 44 mounted pivotally at 45 in bracket 46 by the single faced cam 47 revolving with shaft 48 on one hand and compression spring 49 on the other. When one of the dies 30 reaches the position as shown in Fig. 5, corresponding slot 43 comes into line with the tapered end of slide 42, the spring 49 moves the slide 42 forward into slot 43 as governed by the cam 47 and thereby locks the column 29 and dies 30 in position. The lock is released when the cam 47 revolves sufficiently to withdraw the slide 42 from the slot 43 against the pressure of spring 49. The column 29 is held against the back stroke of pawl 39, or accidental movement by brake 51. A hand wheel 53

is provided for turning the column 29 in setting or adjusting the dies 30 when the machine is not in motion.

Referring to Figs. 11, 12 and 22, 55 is a shaft with a crank 56 which forms a holder for the forming punch 54. This shaft rocks in bearing 57 and is supported by bearing 58 and is also axially fixed in the latter by collar 59 and axially adjustable by set screw 60. The rocking movement between the upper position of punch 54 as shown in Fig. 11, and the lower position as shown in Fig. 21, is imparted by cam 61, through lever 62, shaft 63 and coupling 64. When the forming punch is in its lower position the crank 56 in the shaft 55, adjusted by the coupling screws 65, exerts pressure on the plates 22, Figs. 6 and 21, and press the jaws of the fastener member firmly into position, and prevent distortion while the forming of the head is taking place. The punch 54 is vertically adjustable by the set screw 66, Figs. 8, 11 and 21.

Referring to Figs. 8, 11 and 6, while the column 29 is in motion and one of the dies 30 is approaching the position directly opposite the cutting knife 15 and die 5 shown in Fig. 5, the slide 16 starts the forward movement toward the column 29. The blank strip 1 is fed up with its end extending above the cutting die 5 by an amount equaling the peripheral travel of rolls 3 during a single movement thereof, or the thickness of a fastener member. The cutting knife 15 on its way forward now shears off the projecting end of blank strip 1 against the edge of cutting die 5. The plates 22, the operating end of which have been lifted by the blank strip 1 as it was fed up, are by action of the springs 24 holding the end of the metal strip to prevent displacement or ejection of the fastening member blank at the moment the cutting operation is completed. Likewise the plates 22 continue to hold the blank flat against the top of the cutting die as it is next fed forward toward the column 29 by further movement of cutting knife 15. As the column 29 stops, and the blank propelled by the cutting knife 15 on slide 16 nears the die 30 in the column 29, the locking slide 42 enters slot 43, Fig. 12, to lock the column and dies 30 in position. As the fastening member blank moves into the forming die, as illustrated in Fig. 9, the forming punch 54, Fig. 11 starts on its downward stroke and while the fastening member is held in position and confined on all sides by the cutting knife 15, plates 22 and the forming die 30, Figs. 9 and 21, the forming of the recess and projection of the member is completed, whereupon the cam 61 releases the pressure on plates 22, simultaneously lifting the punch 54; the locking slide 42 withdraws from the slot 43 and slide 16 draws back the plates 22 and cutting

punch 15. The fastener member stays in the die 30, which is now free to move with the column 29 as it starts its rotary movement in an anti-clockwise direction as viewed in Fig. 8. When the slide 16 reaches its extreme outer position with the cutting knife 15 returned to initial position, see Fig. 6, the rolls 3, Fig. 7, feed the blank strip, whereupon the operations are repeated.

The finished fastener members are carried in the dies 30 by the revolving column 29, and as the die stops diametrically opposite to the place where the member was placed in the die, the jaws of the member are clamped around the corded edge of a braid or tape 73 which is fed upward parallel to the blank strip 1. The fastener member, having been attached to tape 73 in the manner above described, is then lifted out of the die by the upward feed of the tape. The tape feed is intermittent, so that the tape will be stationary during the attaching of the fastener member.

Referring to Figs. 8 and 10, 67 are two clamping tools connected with and operated through clamps 68, levers 69, which pivot on the shaft 70 in brackets 71, and double faced cams 72. The latter are keyed to shaft 48. These clamping tools press the jaws of the fastener member together on the corded portion of tape 73 as shown in Figs. 13, 14 and 15. As seen in Fig. 15 the clamping tools have an overhanging lip 74 which holds the fastening member down in the die while the clamping is accomplished. Fig. 13 shows the beginning of the clamping operation, Fig. 14 shows its completion.

Referring to Figs. 13, 16 and 17, the tape 73 with corded edge to which the fastening members are clamped runs through a guide 75 which at the same time serves as a tension against the upward vertical feed of the tape. This guide 75 is held in a slide 76 which carries the tape in toward the column 29 and presses the corded edge in between the jaws of the fastening member held in the die 30, Fig. 13, while the clamping tools 67 press the jaws together and then, as soon as the vertical feed has taken place and the fastener member thereby lifted out of the die 30, withdraws the tape from the die into a position shown in Fig. 16 so as to clear the way for a free rotation of the column 29. The movement of the slide 76 is governed by the cam 77 on shaft 48, Figs. 16 and 17, bell crank 78 pivoting on shaft 79 and the adjustable clamp 80 on slide 76.

Referring to Figs. 1 and 2, the tape 73 unwinds from spool 81, passes through the guide 82 and the tension guide 75, Fig. 16, and across the tape roll 83 which, operated in a clockwise direction, as viewed in Fig. 18, controls the vertical movement of the

tape 73 in conjunction with the sliding shoe 84, to control the spacing of the members by feeding the tape 73. The tape roll is mounted on shaft 85, Figs. 18 and 19, which is operated by the ratchet 86, pawl 87, bell crank 88 and pitman 89, Figs. 1, 2, 17 and 19, and crankplate 90 keyed onto the end of shaft 48, controlling the tape feed for regular spacing.

The shield 91 and the long stroke of pawl 87 serve as a means of reducing the time of the actual tape feed to a small proportion of the pawl travel, in other words, shortens the time of feeding the tape so as to allow as much time as possible for other operations of the machine. 92 is the support or holder of the shield 91 and at the same time serves as a brake to hold the feed roll 83 against accidental rotary movements. 93 is a handwheel attached to shaft 85, for adjustment purposes.

Referring to Figs. 17, 19 and 20, the special feed mechanism, located between the two housings 94 and 95, is operated by eccentric 96 on shaft 48, to provide for the extra tape feed which produces the blank length of tape between two groups of fastener members. 97 is a friction ratchet on shaft 85, with two rolls 98 and springs 99, constructed like ordinary friction ratchets, so that when the encircling ring or bushing 100 is moved in a clockwise direction as viewed in Fig. 20, the rolls 98 wedge between the spiral surface of the ratchet and the inner surface of the bushing 100, and move the shaft 85 with it, whereas if the bushing moves in an anticlockwise direction or the shaft in a clockwise direction, the binding contact between the two is released. Thus the shaft travels in a clockwise direction during the period of regular spacing of members on the tape without disturbing the position of the bushing 100. Keyed to the bushing 100 is a gear 101 which meshes with the gear 102 and revolving on the stud shaft 103, Figs. 19 and 20. Fastened to the gear 102 and revolving with it on the shaft 103 is the gear 104 which is in mesh with gear 105. The latter is idle on the bushing 100 and held against axial movements by the washer 106. Now if the idle gear 105 is moved in a clockwise direction, as shown in Fig. 20, the motion is transmitted through the meshing gears and the friction ratchet 97 to the shaft 85 so that the tape roll 83 is rotated in the same direction. The extent of the movement of the tape roll as compared with the movement of the gear 105 is determined and adjusted by the selection of the gear ratio. The idle gear 105 carries a stop 115 which abuts against the adjusting screw 116, and is held in that position by the spring 117. The gear 105 also carries the catch 118, threaded into the gear and by reason thereof adjustable in an axial

direction. The radial position of the catch is adjusted by the set screw 116.

Referring to Figs. 17, 19 and 20, 107 is a drum threaded on extension 108 of the housing 95. The drum is revolved by the double pawl 109 pivoted at 112 on extension 110 of rocker ring 111, and held in actuating position for rotating the drum in either direction by spring plunger 113. The rocker ring is moved by eccentric 96 through connecting rod 119. Attached to the end of the drum 107 is arm 114. As the drum revolves clockwise as seen in Fig. 20, it moves toward the housing 94, Figs. 17 and 20. The arm 114 revolves with the drum, and when the drum reaches the end of its travel, arm 114 strikes catch 118, Figs. 17 and 20, and moves gear 105 and through the train, friction ratchet 97 and tape roll 83. This movement of the tape roll is ordinarily limited to one step in the rotation of the drum as imparted to it through the rocker arm by one revolution of the machine, but if the blank space of tape between the groups of members should not be sufficient, the drum may be allowed to move the tape roll a few steps in succession. The direction of the movement of the drum 107 is governed by the position of the spring plunger 113. When the latter is positioned in one of the two notches on back of the pawl 109 the spring 120 holds the plunger there and the pawl 109 in the same actuating position revolving the drum until the plunger by action on one of the two levers 121, Figs. 19 and 20, is forced into the other notch and reverses the rotation of the drum. The levers 121 are connected to the spring barrel 123 through the shaft 122. The spring barrel is slidably fitted into and guides the plunger 113.

Referring to Figs. 17 and 19, adjustably mounted on the revolving drum 107 are the rings 124 and 125 carrying the pins 126 and 127 respectively. These rings move spirally with the drum and the pins 126 and 127 are alternately brought against the levers 121, and by pressure on one of these levers, the spring plunger is moved from one actuating position on the back of pawl 109 into the other, always alternating so that the drum keeps constantly moving back and forth between the limits set by the positions of the rings 124 and 125. The position of ring 125 is adjusted so that the pressure of pin 127 reverses the direction of the drum 107 by pressure on the lever 121 at the moment the arm 114 has moved the gear 105 and the tape roll 83 to effect the blank space of tape which determines the end of the fastener stringer. The position of the parts of the mechanism at this moment is illustrated in Fig. 20. The pawl 109 is in position to actuate drum 107 in a clockwise direction, and arm 114 has just moved gear 105 by

pressure on catch 118 as the extension of rocker ring 111 made the last trip from its upper position at A to its lower position at B. At the same time pin 127 on ring 125 was moved up to lever 121. As the rocker ring now moves upwards towards its position at A drum 107 is held against the back stroke of pawl 109, and the pressure on pin 127, by an internal brake consisting of a split collar 128 fastened by pins 129 to the housing extension 108 and expanded by springs 130, Figs. 18 and 19. When position A is reached, the plunger 113 will have been forced over into the other notch on pawl 109, starting drum 107 back in the anti-clockwise direction.

As soon as the drum starts the back movement of arm 114, gear 105 is brought back to its original position with stop 115 against set screw 116 by spring 117. The other gears of course move also, but as this is the back stroke of the bushing 100 on the friction ratchet 97, shaft 85 is not disturbed by this backward movement. The drum keeps on travelling anti-clockwise until pin 126 on ring 124 again reverses the direction by pressing spring plunger 113 back to its position illustrated in Fig. 20. The drum thus travels back and forth, and the number of stepwise movements between each movement of the gear 105 is determined by the position of pin 126 on ring 124. In this manner, the length of a fastener can be regulated by exact counting of the fastener members, from two or three in a group, to the limit allowed by the maximum travel of the drum.

Referring to Figs. 1 and 2, shafts 12 and 48 are connected and run at the same speed by gears 131 and 132, and the cams, eccentric, and crank plate on shaft 48 are timed so as to perform the clamping of the fastener members to the tape simultaneously with the shearing of wire 1 on the opposite side of column 29, and so as to feed the tape with the attached fastener member simultaneously with the feed of wire 1. When the column comes to rest and is locked by slide 42, tape slide 76 carrying guides 75 moves the tape towards the formed member located in the die 30 in line with the direction of the slide movement. The clamping tools 67 on each side of the member are set in motion, and when the corded edge of the tape is pressed in between the jaws of the member the clamping tools close in and complete the clamping operation. Immediately the clamping tools commence to withdraw and as soon as the fastener member will clear the overhanging lip 74 of the withdrawing tools, pawl 87 acts on ratchet 86 to feed the tape upward and lift the attached fastening member out of die 30. At the end of the latter operation, the outward movement of slide 76 takes place. The column

is released and moved another step which brings a new member in the succeeding die and the operations are repeated. 65

The machine is driven by pulleys 133, Figs. 1 and 2, and stopped and started by belt shifter 134. 135 is a wheel for turning the machine by hand. Box 136 receives the tape as it is fed out of the machine with fastener members attached. 70

By the elimination of scrap, 50% of the material required by former machines is saved, and by better distribution of metal in the sheared blanks, 25% more is saved, in making fasteners of equal strength, this latter saving being largely in the thinner jaws permitted by shearing as compared with punching. Also there is a large saving in maintenance, owing to the omission of blanking out punches, and less wear and tear on the shearing knife. 80

It will thus be seen that this machine will shear blanks of substantially finished cross sectional shape from a strip or metal wire of predetermined cross section without any waste or scrap and also perfectly form the recess and projection, as the positive support on all sides during the punching or forming will prevent any distortion. The machine by means of the rotatable die column cooperating with setting punches and an accurately controlled and synchronized tape feed will set the blanks upon a carrier in such a manner that the blanks are in accurately spaced groups of blanks and which are of predetermined number of blanks in each group. 90 95 100

The shape of the member is governed by the cross sectional shape of the metal strip and hence the machine is adapted to make members of different shape and for different purposes than the fasteners herein indicated and I do not desire to be limited in this respect. Certain mechanisms might be omitted, such as the forming punch, in the manufacture of other forms of fasteners or the carrier and feeding device. 105 110

Having now set forth the object and nature of my invention and various arrangements embodying the principles thereof, what I claim as new and useful and of my own invention, and desire to secure by Letters Patent is: 115

1. The combination with means for severing a blank member from the end of a strip, of means for affixing said member to a tape.

2. The combination with means for severing a blank member from the end of a strip, of means for shaping the blank, and means for feeding out said member from said shaping means. 120

3. The combination with means for severing a blank member from the end of a strip, of means for feeding the member to a die, means for shaping the member, and means 125

for feeding out said member from said shaping means.

4. The combination with means for feeding a blank strip, of means for severing a blank member from the end of said strip, means for shaping the member and means for feeding out said member from said shaping means.

5. In a machine for making fasteners, the combination with means for severing successive lengths from a wire, of means for deforming each severed length to provide interlocking surfaces, and means for bending and clamping said severed length upon a tape.

6. The combination with intermittent means for feeding a blank strip, of a reciprocating knife for slicing blank members from the end of said strip and holding the cut blanks while feeding them to a die, means for forming said member in the die, and means for feeding out the formed member from said die.

7. The combination with means for feeding a blank strip, of means for severing a blank from the end of said strip and holding said blank to prevent distortion while it is being shaped, means for shaping said blank, and means for feeding out and setting the formed member on a carrier element.

8. The combination with means for feeding a strip of predetermined cross sectional shape, of means for slicing a blank member from the end of said strip and holding it to prevent distortion while being formed, means for forming said member, means for setting said member on a carrier element and means for feeding the carrier element and attached member away.

9. The combination with intermittent strip feeding means, of means for severing an entire cross sectional part of the strip, forming means for the severed pieces, and means for holding the severed pieces against spreading while being formed.

10. The combination with intermittent strip feeding means, of a knife for severing a blank jaw member from the end of the strip, means for feeding forward said jaw member, means for forming a recess in said member, and means for feeding the said member out of the machine.

11. The combination with intermittent strip feeding means, of a knife for slicing off a blank jaw member from the strip, means for feeding forward said jaw member, means for forming a projection on said member, and means for feeding the said member out of the machine.

12. The combination with means for slicing a blank fastener member from a strip, said strip having its cross section predetermined to provide a pair of separated jaws on the fastener member, of means for feeding a carrier element between said jaws, and

means for pressing the jaws together on said element.

13. A machine for forming jaw shaped interlocking fastener members, comprising in combination means for intermittently feeding a grooved wire, a knife for severing successive blanks from said wire and for guiding a severed blank to a forming die, a forming die, and a punch to deform the material of said severed blank at the vertex of its groove to form opposite interlocking surfaces.

14. The combination with means for slicing a member from a strip, said strip having its cross section predetermined to provide a pair of separated jaws on the member, means for inserting the edge of a tape between said jaws, and means for pressing the jaws together on the tape.

15. The combination with means for feeding a strip of Y cross section, of means for slicing a blank therefrom having jaws and a body, means for feeding the blank into a die, means for forming the body with a recess on one side and a head on the other, means for feeding a tape between the jaws, and means for setting the jaws on the tape.

16. The combination with means for feeding a strip of predetermined cross section, means for slicing off members having jaws, means for feeding a continuous tape between said jaws, means for pressing said jaw members on said tape, and means for varying the feed of said continuous tape to vary the spacing of said members.

17. The combination with means for feeding a metal strip of irregular cross sectional shape, of means for slicing from said strip an element having separated jaws at its forward end, means for attaching said jaws to a carrier.

18. The combination with means for severing members from the end of a metal strip of predetermined cross sectional shape, of means for affixing said members to a strip in accurate spaced relationship.

19. The combination with means for slicing members from a metal wire of irregular cross section, of means for affixing said members to a strip in accurate spaced relationship, and means for varying the spacing to form groups of members of a predetermined number.

20. The combination with means for feeding a strip a predetermined amount, of means for severing a blank member from the end of said strip, means for shaping the member, and means for feeding out said member from said shaping means.

21. The combination with means for slicing a member of any predetermined thickness from a strip, of means for shaping the member and means for feeding out said member from said shaping means.

22. The combination of a cutting die hav-

ing an orifice, means for feeding a wire having an indented cross section through said orifice, the latter being shaped to accommodate said wire, a knife having a cutting edge shaped to engage the indentation of said wire, means for reciprocating said knife across the face of said cutting die to cut off successive lengths from said wire, and means for attaching said lengths to a tape.

23. The combination of a cutting die having an orifice, means for intermittently feeding a wire having an indented cross section through said orifice in predetermined lengths, a knife having a cutting edge shaped to engage the indentation of said wire, means for reciprocating said knife across the face of said cutting die to slice each length of wire fed through the orifice to form a blank fastener member, means for shaping said member, and means for holding said member with its indented portion against the corresponding portion of the knife edge to prevent distortion while shaping.

24. The combination with means for feeding a strip, means for severing a member from the end of the strip, means for holding the member against said severing means to permit the member to be fed forward thereby, means for shaping said member, and means for feeding out said member from said shaping means.

25. The combination with means for feeding a strip, of means for severing a section from said strip to form a blank fastener member, a rotatable column, a die mounted on said column, a punch, means for actuating said punch to engage said die, spring plates cooperating with said severing means to feed said member to said die and to hold said member in the die during the actuation of the punch, means for setting the member on a tape, means for rotating the column to feed the member from said punch to said setting means, and means for feeding the tape.

26. The combination with means for feeding a strip, of means for severing a section from said strip to form a blank fastener member, a rotatable column, a die mounted on said column, a punch, means for actuating said punch to engage said die, spring plates cooperating with said severing means to feed said member to said die and to hold said member therein during the actuation of said punch, means for locking said column during the actuation of the punch, means for setting the member on a tape, means for unlocking and rotating the column to feed the fastener member from the punch to the setting means, and means for feeding the tape.

27. The combination with means for feeding a strip of predetermined cross section, means for severing a member from said strip, a punch and die for forming said

member, spring plates cooperating with said severing means and said die to hold said member during the forming to prevent distortion, and means for feeding out said member from said die.

28. The combination with means for severing a member from a metal strip of irregular cross section, means for shaping the member, tape feeding means, means for setting said member on said tape and means to vary the tape feed to vary the spacing of the members on said tape.

29. The combination with means for severing a member from a metal wire of predetermined cross sectional shape, means for clamping said member to a tape, the said clamping means having overhanging lips to hold said member during the clamping.

30. In a machine for making fasteners, a revoluble column having a plurality of dies, means for feeding blanks to said dies, means for forming the blanks, and means for attaching the formed blanks to a carrier.

31. The combination with means for severing blanks from the end of the wire, of a revoluble column having a plurality of dies, means for feeding blanks to said dies, means for forming the blanks and means for attaching the formed blanks to a carrier.

32. A machine for making jaw fastener members comprising in combination a movable die in which said members are adapted to be deformed to provide an interlocking surface, means for intermittently feeding the members to said die, and means for moving said die after the formation of said interlocking surface for affixing the members to a tape.

33. The combination of a rotatable column having a plurality of dies, means for feeding blanks to the dies, means for forming the blanks in the dies, means for feeding a tape, means for attaching the formed blanks to said tape, means for intermittently rotating the column to bring the formed blanks into position for so attaching, and means for holding the tape away from the column during the rotation of the latter.

34. The method of making fastener members which comprises forming a strip of predetermined cross section, slicing blank members from the end thereof, forming said members to provide interlocking surfaces, and setting said formed members on a carrier by distortion.

35. The method of making fastener members which comprises forming a strip of predetermined cross section, slicing blank members from the end thereof, forming interlocking surfaces on each blank member, and compressing said members on a carrier independently of said interlocking surface.

36. The method of making fastener members which comprises forming a strip hav-

ing an indented cross section, slicing the blank fastener members from the end of the strip, forming the vertices of said members into socket and head portions, and clamping said formed members upon a carrier inserted in the indentations.

37. The method of making fastener members which comprises forming a channelled strip, slicing blank members from the end of the strip having jaws formed by the channel sides, and clamping said jaws upon a tape inserted therebetween.

38. The method of making jaw member interlocking fasteners, which comprises severing a strip from the end of a wire and simultaneously feeding the strip toward a die, deforming said strip to provide an interlocking surface and moving the deformed strip to a carrier.

39. The method of making fastener member blanks, which comprises slicing such members successively from a preformed strip of cross section approximating the outline of the blank member.

40. The method of making fastener members which comprises slicing blank members from a preformed strip of generally Y-cross section, the blanks each having a base and a pair of arms, said arms and base being arranged in accordance with the Y-cross section of the strip, forming a socket and a head in the base portion of each blank, and compressing the arms of the member on a carrier.

41. In a machine for making interlocking fastener jaw members, the combination with means for severing successive blanks from the end of a wire, of a movable die, means for moving a severed strip onto said die, punching means adapted to cooperate with said die to form an interlocking surface on said strip intermediate the material of the jaw portions, and means for adjusting the alignment between the die, punching means, and strip moving means.

42. In a machine for making interlocking fastener jaw members, the combination with means for severing successive strips from the end of a wire, of a movable die, means for moving a severed strip onto said die, punching means adapted to cooperate with said die to form an interlocking surface on said strip intermediate the material of the jaw portions, and means for locking the die in position for punching.

43. In combination with means for intermittently feeding a tape in the direction of its length, means for clamping a fastener member on said tape during each pause in the feed thereof, means for feeding fastener members to said clamping means, and means for effecting a transverse movement of said tape during each actuation of said fastener feeding means to clear the latter.

44. In a fastener attaching machine, a

tension device for holding a tape, means for intermittently feeding a tape lengthwise through said tension device, means for clamping a jaw shaped fastener member upon the tape during each pause in the movement thereof, means for feeding fastener members to said clamping means, and means for reciprocating said tension device during each pause in the feed of said tape to effect clearance between the tape and the fastener feeding means.

45. In a fastener attaching machine, a tape control, comprising a tension device, means for intermittently feeding a tape through said tension device, automatic means for reciprocating said tension device during each pause in the feed of said tape, and means for affixing the fastener to the tape.

46. In a machine for forming blanks, a rotatable column having a plurality of dies, means for feeding the blanks to said dies, means for forming the blanks in the dies, means for attaching the formed blanks to a carrier, and means for rotating the column to bring the blanks into position for so attaching.

47. The combination with means for cutting blanks, of a rotatable column having a plurality of dies, means for feeding the blanks to said dies, means for forming the blanks in the dies, means for attaching the formed blanks to a carrier, and means for rotating the column to bring the blanks into position for so attaching.

48. The combination with means for slicing blanks from a strip having its cross section predetermined to give a desired outline to the blanks, of a rotatable column having a plurality of dies, means for feeding the blanks to said dies, means for forming the blanks in the dies, means for attaching the formed blanks to a carrier, and means for rotating the column to bring the blanks into position for so attaching.

49. The combination with means for intermittently feeding a strip having a preformed uniform cross section, of means for slicing successive blank members therefrom having the outline of said cross section, and including compressible jaw members, means for feeding a carrier element and the blank member jaws together, and means for compressing the jaws on the carrier element.

50. The combination with means for intermittently feeding a strip having a preformed uniform cross section, of means for severing successive blank members therefrom having the outline of said cross section, and means for forming the blank members to a predetermined shape within said outline.

51. The combination with means for intermittently feeding a strip having a preformed uniform cross section, of means for

severing successive blank members therefrom having the outline of said cross section, means for forming the blank members to a predetermined shape, means for attaching the formed members to a carrier, means for feeding the sheared members from said shearing means to said forming means and thence to said attaching means, and means for feeding the carrier.

52. The combination with means for intermittently feeding a strip, of means for severing successive members therefrom, each of said members having the same outline as the cross section of the strip, means for attaching the severed members to a carrier, means for feeding the severed members from said severing means to said attaching means, and means for feeding the carrier.

53. A machine for forming jaw members comprising in combination means for intermittently feeding a grooved wire, a forming die, a knife for severing successive strips from said wire and for guiding a severed strip to said die, means adapted for cooperation with said die to deform the material at the vertex of the jaw portions to form an interlocking surface, means for withdrawing the knife and inserting a tape between the jaw portions of said severed strip while in said die, and means for closing the jaw portions on said tape.

54. In a machine for forming jaw fastener members, the combination with means including a die for deforming a blank member intermediate the material forming its jaw portions to provide opposite interlocking surfaces, of means for laterally moving a tape in between said jaw portions for attaching the member to the tape, and for longitudinally moving the tape to remove said member from the die.

55. The combination with means for feeding a strip of predetermined cross sectional shape, of means having an edge complementary to the adjacent side of said strip for slicing from said strip successive flat members having the outline of said cross section, means for forming interlocking surfaces on the successive members while en-

gaged with said slicing means, and means for holding said members during forming to prevent distortion.

56. In a machine for forming jaw fastener members, the combination with means for cutting a strip adapted to form such member, of a die adapted to deform a portion of said strip and produce an interlocking surface thereon, said cutting means being adapted to guide said strip to the die and assist in holding said strip on the die during its deformation.

57. In a machine for forming the connecting members having jaw portions of a slide fastener, the combination with means for severing blank members from the end of a wire, of means for changing the cross section of said members at one portion to provide interlocking parts and means for bending and clamping said members to a tape.

58. In a machine for forming jaw members, the combination with an intermittent wire feeding means, of a knife adapted to sever successive strips from the end of a wire, yieldable means for cooperation with the side of said strip opposite its severed surface during and after said strip is severed, a die in which the material of said strip intermediate its jaw forming portions is adapted to be deformed to provide an interlocking surface and means for clamping said yieldable means to assist in holding said strip in said die.

59. In a machine for making interlocking jaw fastener members, the combination with an intermittent wire feeding means, of a knife adapted to sever successive strips from the end of a wire, a die in which a severed strip is adapted to be deformed intermediate the material of its jaw portions to provide an interlocking surface, and means for guiding said severed strip to the die and for holding the same in position on the die, said last mentioned means including the aforementioned knife.

Signed at New York city, in the county of New York and State of New York, this 7th day of July A. D. 1919.

GIDEON SUNDBACK.

DISCLAIMER

1,467,015.—*Gideon Sundback*, Meadville, Pa. METHOD AND MACHINE FOR MAKING FASTENERS. Patent dated September 4, 1923. Disclaimer filed September 14, 1936, by the assignee, *Hookless Fastener Company*.

Hereby disclaims claims 32, 46, 47, and 54 of said patent.

[*Official Gazette October 13, 1936*]

DISCLAIMER

1,467,015.—*Gideon Sundback*, Meadville, Pa. METHOD AND MACHINE FOR MAKING FASTENERS. Patent dated September 4, 1923. Disclaimer filed March 7, 1934, by the assignee, *Hookless Fastener Company*.

Hereby enters this disclaimer to that part of said specification which is in the following words, to wit:

“The shape of the member is governed by the cross sectional shape of the metal strip and hence the machine is adapted to make members of different shape and for different purposes than the fasteners herein indicated and I do not desire to be limited in this respect. Certain mechanisms might be omitted, such as the forming punch, in the manufacture of other forms of fasteners or the carrier and feeding device.”

[Page 5, lines 101 to 110 inclusive.]

And your petitioner further disclaims from the scope of each of claims 1 to 33, inclusive, and 41 to 59, inclusive, any combination or any machine, and from the scope of each of claims 34 to 40, inclusive, any method of making, except one for forming and affixing to a tape carrier slide fastener members such as are described in the sentence beginning in line 24, of page 1 of the specification and reading as follows:

“The fastener member blanks consists of a body carrying separated jaws, and provided with a recess on one side and a head on the other, these respective recesses and heads being arranged on a pair of tape stringers so as to alternately interlock through a slider mounted on both stringers.”

[*Official Gazette March 27, 1934.*]

PLAINTIFF'S EXHIBIT No. 22

F. Ulrich Patent No. 2,221,740

Filed Dec. 11, 1937

Patented Nov. 12, 1940

MANUFACTURE OF SLIDE FASTENER ELEMENTS

Filed Dec. 11, 1937

2 Sheets-Sheet 1

Fig. 1.

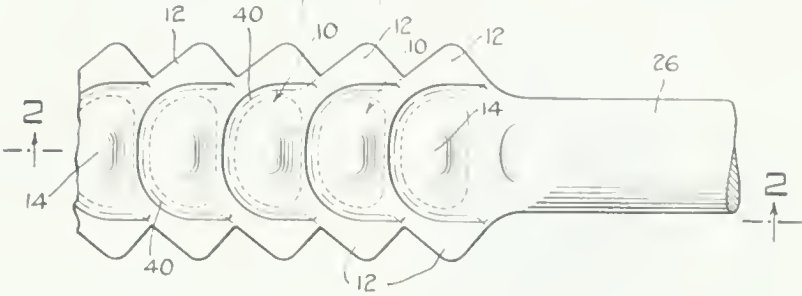


Fig. 2.

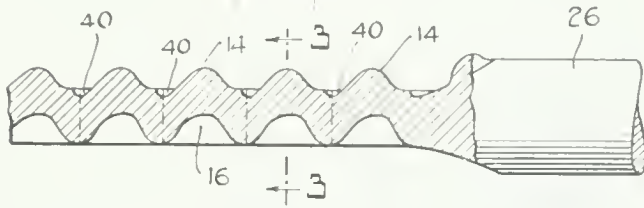


Fig. 3.

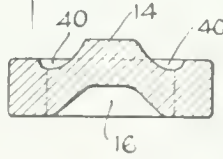


Fig. 4.

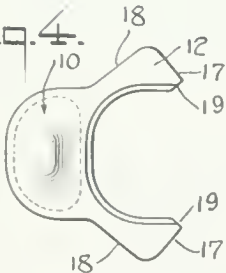


Fig. 5.

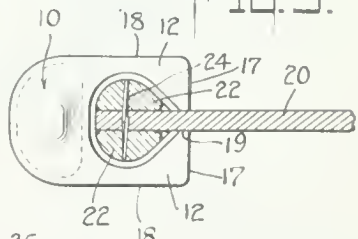


Fig. 6.

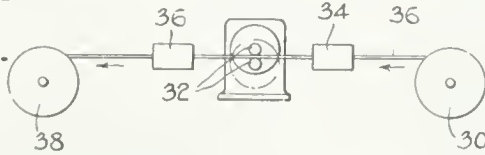
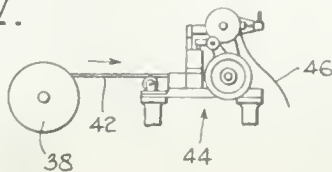


Fig. 7.



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Nov. 12, 1940.

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2,221,740

MANUFACTURE OF SLIDE FASTENER ELEMENTS

Filed Dec. 11, 1937

2 Sheets-Sheet 2

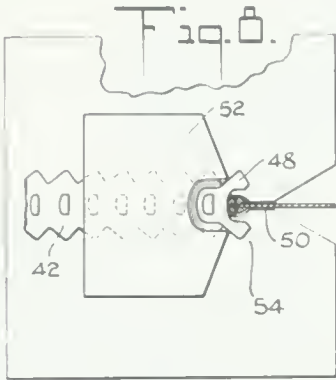


Fig. 8.

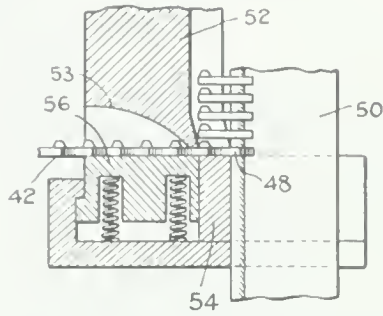


Fig. 10.

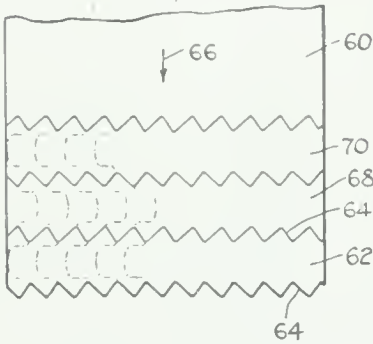


Fig. 11.

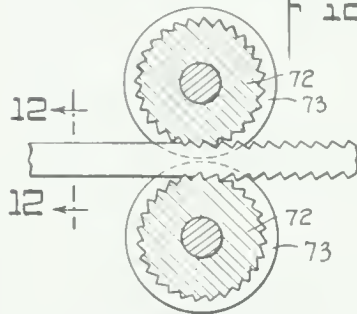


Fig. 12.

Fig. 13.

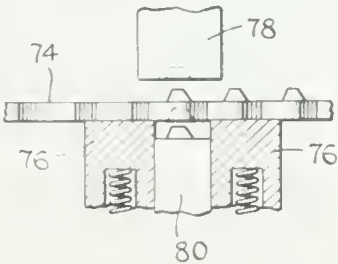
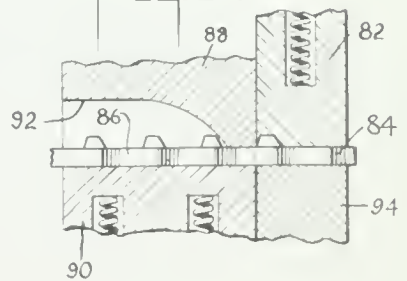


Fig. 14.



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UNITED STATES PATENT OFFICE

2,221,740

MANUFACTURE OF SLIDE FASTENER ELEMENTS

Frederick Ulrich, Bayonne, N. J., assignor to
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a corporation of New Jersey

Application December 11, 1937, Serial No. 179,299

23 Claims. (Cl. 29—148)

This invention relates to slide fasteners, and more particularly to the manufacture of the interlocking elements thereof.

The ordinary methods of manufacturing standard slide fastener elements involve a certain amount of scrap or waste material due to the irregular configuration of the elements when in open-jawed condition. This scrap or waste, while apparently small and negligible when dealing with a few elements, becomes very important when the slide fasteners are manufactured in vast amounts under high speed quantity production methods.

The primary object of my invention is to generally improve the manufacture of standard slide fastener elements, particularly with a view to increasing the efficiency and economy of manufacture. By standard elements I mean the most common type in which the jaws have substantially parallel outer edges, with substantially square ends for cooperation with the flanges of the slider. A more specific object is to manufacture such standard slide fastener elements without scrap or waste while making and handling the same in a connected series or continuous wire of embryo elements. A still more particularized object is to make the invention applicable to raw stock of the most conventional and inexpensive character, as for example, a simple round wire of uniform diameter, or a simple flat sheet of uniform thickness. Still another object of my invention is to apply the improvement features thereof to the process disclosed and claimed in a co-pending application Serial No. 215,180 filed by George Wintritz on June 22, 1938, which process is a most efficient, advantageous and desirable one, despite the single disadvantage that it does involve the production of some scrap or waste between the elements, and that disadvantage is eliminated in accordance with the present invention.

To the accomplishment of the foregoing and other more detailed objects which will hereinafter appear, my invention consists in the method steps and the product produced thereby, and their relation one to the other, as hereinafter are more particularly described in the specification and sought to be defined in the claims. The specification is accompanied by drawings in which:

Fig. 1 is a plan view of a short section of wire showing the manner in which a round wire is formed into a connected series of embryo slide fastener elements;

Fig. 2 is a section taken in elevation in the plane of the line 2—2 of Fig. 1;

Fig. 3 is a transverse section taken in the plane of the line 3—3 of Fig. 2;

Fig. 4 is a plan view of a single finished element made in accordance with my invention;

Fig. 5 is a similar view showing the element clamped to a tape or stringer;

Fig. 6 schematically illustrates the production of the wire by a rolling process;

Fig. 7 schematically illustrates the utilization of the rolled wire for application of the elements to a tape or stringer as the elements are severed from the wire;

Fig. 8 is a plan view schematically illustrating the punch arrangement for separating the end-most element from the wire;

Fig. 9 illustrates the same in side elevation;

Fig. 10 is a plan view showing the manner in which strips of embryo slide fastener elements may be severed from a sheet of material without scrap or waste;

Fig. 11 illustrates an alternative method for forming the desired strip by rolling the same, the edges of a flat wire being rolled to the desired notched or serrated condition;

Fig. 12 is a section through the wire taken on the plane of the line 12—12 of Fig. 11;

Fig. 13 schematically illustrates the formation of the desired interlocking means or projection and recess on the heads of the elements when working in accordance with the processes of Fig. 10 or Fig. 11; and

Fig. 14 schematically illustrates the severance of the finished elements from the strip.

Referring to the drawings, and more particularly to Figs. 1 and 2, I there show a step product obtained when practicing the invention in preferred manner. This step product is an integral strip of embryo fastener elements each having embryo spread jaws 12 and an embryo head generally designated 10. The embryo head is provided with interlocking means, and in the present case, the interlocking means is of conventional type, there being a projection 14 on one side of the embryo head and a recess 16 on the opposite side of the embryo head. It will be noticed on inspection of the drawings that the embryo head of each embryo element is located within and generally conforms to the embryo jaws of the next embryo element, the embryo head 10 substantially filling the space between the spread embryo jaws 12. From another and perhaps more accurate viewpoint, it may be said that the embryo jaws 12 are so widely spaced and spread and

so shaped, as to form a space therebetween large enough to receive the embryo head 10.

The shape of the exterior of the jaws also deserves consideration. In Fig. 4 I show the individual element as severed from the continuous strip of embryo elements. This element is applied to a tape as shown in Fig. 5, and it will be noted that when the jaws 12 are changed from the spread position of Fig. 4 to the closed position of Fig. 5, the outer edges 18 change from sharply divergent position to parallel position and preferably are spaced apart an amount substantially equal to the width of the head 10. The ends 17 of the jaws are preferably disposed substantially perpendicular to the outer edges 18 so that when the jaws are closed the ends form a surface which is substantially perpendicular to the tape, as is shown in Fig. 5. The ends are of such dimension that when closed against the tape the sides of the jaws are brought into substantially parallel relation while the ends form substantially perpendicular shoulders for best cooperation with the flanges of a slider. In other words, the element when completed and fastened to the tape does not differ noticeably in appearance from elements made by the more conventional wasteful methods, except perhaps for the shape of the opening between the jaws which receives the beaded edge of the tape. In respect to the inside of the jaws, attention may be directed to the short inner walls 19 which preferably extend generally parallel to the outer walls 18 and generally perpendicular to the end walls 17. With such an arrangement, the inside walls 19 bear directly against the tape when the jaws are closed, as shown in Fig. 5, thus providing a substantial bearing surface to prevent penetration of the tape. The tape may be constructed in accordance with known methods, that here illustrated comprising a woven tape 20 having cords 22 sewed on opposite sides of one edge of the tape as by means of stitching 24.

The desired shaping of the jaws 12 causes the wire or strip of embryo elements to have notched or serrated edges, as is clearly evident from inspection of Fig. 1. As will be developed later, this edge formation may be obtained in a number of ways, but I prefer to obtain the same by pressing and deforming simple round wire stock as illustrated at 26 in Figs. 1 and 2. The deformation of the wire to change it from round to the desired form is preferably done by a rolling process disclosed and claimed in the aforesaid co-pending application Serial Number 215,180 filed by George Wintritz on June 22, 1938. The arrangement is schematically illustrated in Fig. 6, in which the round wire stock 36 is fed from a large supply reel 30 to small diameter pressure rolls 32. Wire straightening and guiding devices are schematically represented at 34 and 36. The rolled wire is wound up on a take-up reel 38. The pressure rolls 32 are matingly recessed and so shaped that in a single rolling operation, the round wire is changed to form the desired projections 14, recesses 16 and jaws 12. The wire is given the desired serrated or notched edge. The embryo heads 10 of the embryo elements may, if desired, be outlined by a trough-like depression or groove 40 (see Figs. 1, 2 and 3), but this is not essential. The object of this groove is to help properly finish the shaping of the heads of the elements to desired configuration, and also to facilitate severing of the elements. The lines of severance are indicated in Figs. 1, 2 and 3

by dot-and-dash lines, and it will be noted that the trough 40 is preferably horizontal at the point of severance, this being a desirable condition for best cooperation with the punch subsequently functioning to sever the individual elements from the wire.

In the drawings it will be seen that the successive notches or serrations at the side edges of the wire are closely adjacent one another, and that the successive interlocking means or projections and recesses are closely adjacent one another, the spacing therebetween being only a fraction of the length of the elements.

As is explained in the co-pending application Serial Number 215,180 previously referred to, the embryo elements are preferably fed jaw first toward the tape, and are severed from the wire at or about the same time that they are secured to the tape. For this reason, the wire is rolled in such direction as to point the embryo elements head first, as is clearly shown in Figs. 1, 2 and 6. It necessarily follows that when the wire is drawn from reel 38, the embryo elements point jaw first. The apparatus for mounting the elements on the tape forms no part of the present invention, and need not be described in detail. It is schematically illustrated in Fig. 7, in which the wire 42 is fed jaw first from reel 38 to a mounting machine generally designated 44 wherein the elements are successively secured to an intermittently vertically moving tape, the finished tape carrying the fastener elements being indicated as leaving the machine at 46.

The machine is described in application Serial Number 215,180 previously referred to, but one change may be indicated. As described in said application, there is a web of waste or scrap material between the embryo elements, and the severing punch punches this material away from between the elements. No relative vertical displacement of the wire and element is needed. In the present arrangement, there is no waste or scrap material between the successive embryo elements, the severing operation being a shearing operation, and I therefore provide relative movement of the wire and the endmost element being severed therefrom. For convenience in attaching the endmost element to the tape, I prefer to move the wire rather than the element. Referring to Figs. 8 and 9, the endmost element 48 is shown adjacent the tape 50, said element being severed from the wire by a punch 52 which operates on the wire and cuts around the element. The element 48 rests upon and is held in position by a stationary support 54 whereas the wire 42 is depressed by punch 52, the movement of wire 42 being accommodated by a yieldable support or "spring pad" 56. The punch 52 is cut away at 53 for clearance. The clamping jaws are not shown, but are generally like those in application Serial No. 215,180 above referred to. They follow the punch 52 on each side of tape 50, and operate directly over the die 54 on which the endmost element rests.

I have so far described the invention in preferred form in accordance with which the embryo elements are rolled from a round wire. It is also possible, however, to utilize the main features of the invention while starting with other types of stock. For example, in Fig. 10 I show the manner in which strips of embryo elements may be formed from a large sheet 60. Strips 62 having the desired serrated or notched edges 64 are struck successively from the edge

of the sheet by a suitable die working in a large press. The sheet 60 is, of course, intermittently advanced in the direction of the arrow 66.

It is important to observe that the successive strips 62, 68, 70, may themselves be struck from the sheet without scrap or waste metal, for the serrated edges of the successive strips mate with one another. If the notches or points of the successive strips are made symmetrical, the strips may be considered to face all in the same direction, but this is not at all necessary, and the notches may be made unsymmetrical in order to give the spread embryo jaws the most desirable outline. The only difference in such case is that alternate strips may be considered as facing in opposite directions. Thus, in strips 62 and 70 the embryo heads point toward the left, while in strip 68 the embryo heads point toward the right.

This result may be obtained while using a single punch or die having the outline of the strip 68, the sheet 60 then being advanced the distance of two strips for each operation of the press. Strip 68 is then formed directly beneath the punch and strip 62 is formed beyond the punch, two strips being cut for each operation of the punch.

Still another manner in which strips having the desired serrated edge may be formed, is illustrated in Fig. 11. In this case I begin with a wire of preferably rectangular cross-section, as shown in Fig. 12. The wire is run between pressure rolls 72 which function to indent or serrate the edges of the strip. The rolls have flanges 73 at each side to prevent spreading of the material sideways while the edges are being compressed by the rolls. A continuous strip of great length may be formed, the strip being reeled, if desired.

The strips of Figs. 10 and 11 may be provided with the desired projections and recesses, and may be severed into individual elements, in accordance with known methods unnecessary to outline here in detail. The formation of the head and recess is schematically illustrated in Fig. 13, in which the strip 74 is fed over spring pads 76. A press-operated punch 78 moves the strip 74 downwardly against the cooperating stationary die 80. The strip is, of course, intermittently fed longitudinally between successive operations of the punch 78. This feed is facilitated by the notching or serration of the strip which provides excellent surfaces against which the appropriate feed and positioning dogs may operate.

The severance of the wire into individual elements is schematically illustrated in Fig. 14, in which it will be seen that a punch 80 cuts the strip 86 free from the endmost element 84. The punch works against a spring pad 88, and is cut away for clearance at 92. The shearing action is against stationary die 84. The end element 84 is held by a spring pressed plunger 92 which reciprocates with the punch 80, in known fashion. It is a simple matter to sever the elements from the strip when dealing with loose elements which are to be subsequently tumbled, hopped, and so on. If the elements are to be secured directly to the tape as they are severed from the strip, the separation may be performed as was explained in connection with Figs. 8 and 9.

It will be understood by those skilled in the art that the operations of Figs. 13 and 14 need not be performed in separate machines, and in fact, the punches 78 and 80 may be mounted

directly on a single press for simultaneous movement.

It will also be understood that it is not necessary within the scope of the present invention to form the heads after forming the serrated strips. It is possible for example, when cutting strips from a sheet as shown in Fig. 10, to form the heads and recesses in the sheet as the sheet is fed through the press, so that the strips cut from the sheet are characterized not only by the serrated edges, but also by heads and recesses. In such case the only operation needed to complete the elements is to sever the strip into individual elements, this being done all without scrap or waste, as has been previously described.

It is believed that the invention as well as the many advantages thereof, will be fully understood from the foregoing description. The elements are formed without substantial scrap or waste material, while starting with raw stock in common, inexpensive form, and while forming the embryo elements in a continuous strip or wire.

It will be apparent that while I have shown and described my invention in preferred forms, many changes and modifications may be made without departing from the spirit of the invention defined in the following claims.

I claim:

1. A step product used in the manufacture of slide fastener elements, said step product comprising a single integral strip of embryo fastener elements each having embryo spread jaws, the head of one element being located between the embryo spread jaws of the next element, said head filling the space between said embryo spread jaws, the exterior edges of the strip being notched or serrated to conform to the outer ends of the embryo spread jaws, whereby the elements may be formed from the strip without substantial waste or scrap material.

2. A step product used in the manufacture of slide fastener elements, said step product comprising a flattened strip of metal having closely spaced interlocking means at the top and bottom, the exterior edges of the strip having closely spaced notches or serrations to conform to the outer ends of embryo spread jaws, said spacing being only a fraction of the length of the elements, the strip providing metal for a series of embryo fastener elements with the embryo head of one embryo element nested within and filling the space between the embryo spread jaws of the next embryo element, whereby the elements may be formed from the strip without substantial waste or scrap material.

3. An interlockable element for a slide fastener, said element comprising a head and spread jaws connected thereto, the configuration of said head when viewed in plan being such as to conform to and fit fully within the space between the jaws, said jaws having diverging outer sides adapted to be brought into substantially parallel relation when the jaws are closed.

4. An interlockable element for a slide fastener, said element comprising a head and spread jaws connected thereto, said head being formed on opposite sides with a projection and a recess, the configuration of said head when viewed in plan being such as to conform to and fit fully within the space between the jaws, said jaws having diverging outer sides adapted to be brought into substantially parallel relation when the jaws are closed, and having converging ends

which are substantially perpendicular to the sides.

5. An interlockable element for a slide fastener, said element comprising a head and spread jaws connected thereto, said head being formed with interlocking means, and said jaws being so widely spaced and spread and so shaped as to form a space therebetween large enough and so shaped that the material removed from between said jaws will itself constitute a head like the head of the element, said jaws having ends converging at such an angle that when the jaws are closed on a tape the ends come substantially perpendicular to the tape, the part just inside the ends being substantially perpendicular to the ends in order to form a broad bearing surface on the tape when the jaws are closed.

6. An interlockable element for a slide fastener, said element comprising a head and spread jaws connected thereto, said jaws being so widely spaced and spread and so shaped as to form a space therebetween large enough to receive the entire head of an identical element, said jaws being so shaped that when closed the outer edges come into substantially parallel relationship.

7. An interlockable element for a slide fastener, said element comprising a head and spread jaws connected thereto, said head being formed with interlocking means, and said jaws being so widely spaced and spread and so shaped as to form a space therebetween large enough and so shaped that the material removed from between said jaws will itself constitute a head like the head of the element, said jaws having ends converging at such an angle that when the jaws are closed on a tape the ends come substantially perpendicular to the tape for cooperation with a slider.

8. An interlockable element for a slide fastener, said element comprising a head and spread jaws connected thereto, said head being formed with interlocking means, and said jaws being so widely spaced and spread and so shaped as to form a space therebetween large enough and so shaped that the material removed from between said jaws will itself constitute a head like the head of the element, said jaws having ends arranged substantially perpendicular to the outer sides of the jaws, said ends being of such dimension that when closed against a tape the sides of the jaws are brought into substantially parallel relation while the ends form substantially perpendicular shoulders for cooperation with a slider.

9. In the manufacture of slide fastener elements, the method which includes forming a continuous strip of metal having notched or serrated edges conforming to the outer ends of embryo spread jaws, said strip comprising a series of embryo elements with the embryo head of one formed within and filling the space within the embryo spread jaws of the next element, and severing the elements without substantial scrap or waste.

10. In the manufacture of slide fastener elements, the method which includes forming a continuous strip of metal to have notched or serrated edges conforming to the outer ends of embryo spread jaws, and a series of interlocking means, the successive notches being closely adjacent one another and the successive interlocking means being closely adjacent one another, the spacing therebetween being only a fraction of the length of the elements and corresponding to the spacing of a series of embryo elements with the embryo head of one embryo nested fully

within the filling the space within the spread embryo jaws of the next embryo element, and severing the strip on an outline such as to define the elements without substantial scrap or waste.

11. In the manufacture of slide fastener elements, the method which includes treating a wire to give the same serrated or notched edges conforming to the outer ends of the embryo spread jaws of a series of embryo fastener elements, and severing individual fastener elements from the wire by means of a punch or other severing means which functions to outline the head of the element, the head of each element being formed between and filling the space between the embryo spread jaws of the next element, whereby the elements are formed without substantial scrap or waste.

12. In the manufacture of slide fastener elements, the method which includes pressing a round wire between forming devices to squeeze the same or deform the same into a wire having serrated or notched edges and a series of interlockable projections and recesses on opposite sides of the wire, the embryo head of each element being formed between and filling the space between the embryo spread jaws of the next element, and finally forming the individual elements by severing the endmost element from the embryo jaws of the next succeeding element, whereby said elements are formed without substantial scrap or waste.

13. In the manufacture of slide fastener elements, the method which includes pressing a round wire between forming devices to squeeze and deform the same into a wire having serrated or notched edges, and a series of interlockable projections and recesses on opposite sides of the wire, the successive serrations being closely adjacent one another and the successive interlockable means being closely adjacent one another, the spacing therebetween being only a fraction of the length of the elements and corresponding to the spacing of a series of embryo fastener elements with the embryo head of each embryo element nested fully within and filling the space between the embryo spread jaws of the next embryo element, and finally forming the individual elements by severing the strip on an outline such as to define the elements without substantial scrap or waste.

14. In the manufacture of slide fastener elements, the method which includes rolling a continuous wire between appropriately shaped pressure rolls to squeeze and deform the wire so as to give the same serrated or notched edges conforming to the outer ends of the embryo spread jaws of a series of embryo fastener elements, and severing individual fastener elements from the wire by means of a punch or other severing means which functions to outline the head of the element, the embryo head of each element being formed between and substantially filling the space between the embryo spread jaws of the next element, whereby the elements are formed without substantial scrap or waste.

15. In the manufacture of slide fastener elements, the method which includes rolling a wire between appropriately recessed pressure rolls to squeeze the wire and deform the same into a wire having serrated or notched edges and a series of interlockable projections and recesses on opposite sides of the wire, the spacing of the serrations and of the interlockable means being so close as to correspond to a series of embryo fastener elements only if the embryo head of each

embryo element is nested fully within and substantially fills the space between the embryo spread jaws of the next embryo element, and finally forming the individual elements by severing the strip on an outline such as to define the elements without substantial scrap or waste.

16. In the manufacture of slide fastener elements, the method which includes pressing a round wire between forming devices to squeeze the same or deform the same into a wire having serrated or notched edges and a series of interlockable projections and recesses on opposite sides of the wire, and a trough or scoring outlining the heads of the elements, the embryo head of each element being formed between and filling the space between the embryo spread jaws of the next element, and finally forming the individual elements by severing the elements at the scoring without substantial scrap or waste.

17. In the manufacture of slide fastener elements, the method which includes forming a continuous strip of metal having notched or serrated edges conforming to the outer ends of embryo spread jaws, said strip comprising a series of embryo elements with the embryo head of one formed within and filling the space within the embryo spread jaws of the next element, and successively severing the elements by separating the head of the endmost element from between the embryo jaws of the next succeeding element by punching the strip including said embryo jaws away from the endmost element, whereby said elements are formed without substantial scrap or waste.

18. In the manufacture of slide fastener elements, the method which includes cutting successive strips from a sheet of material, each of said strips having notched or serrated edges conforming to the outer ends of the spread jaws of successive fastener elements, the successive strips mating together with the serrated edge of one fitting into the serrated edge of the next, whereby said strips are cut from the sheet without substantial scrap or waste, and severing each strip into individual elements.

19. In the manufacture of slide fastener elements, the method which includes cutting successive strips from a sheet of material, each of said strips having notched or serrated edges conforming to the outer ends of the spread jaws of successive fastener elements, and severing the individual elements by means of a punch or cutting means which outlines the head of the element, said head conforming to and fitting within and substantially filling the space between the spread jaws of the next element, whereby the individual elements are formed from each of the serrated strips without substantial scrap or waste.

20. In the manufacture of slide fastener elements, the method which includes cutting successive strips from a sheet of material, each of said strips having notched or serrated edges conforming to the outer ends of the spread jaws of successive fastener elements, the successive strips mating together with the serrated edge of one fitting into the serrated edge of the next, whereby said strips are cut from the sheet without substantial scrap or waste, and severing the individual elements by means of a punch or cutting means which outlines the head of the element,

said head conforming to and fitting within and substantially filling the space between the spread jaws of the next element, whereby the individual elements are formed from each of the serrated strips without substantial scrap or waste.

21. In the manufacture of slide fasteners, the method which includes forming a continuous strip of metal having notched or serrated edges conforming to the outer ends of embryo spread jaws, said strip comprising a series of embryo elements with the embryo head of one formed within and filling the space within the embryo spread jaws of the next element, feeding the strip longitudinally with the embryo elements pointing jaw first toward a transversely extending tape until the jaws at the end of the strip are astride the tape, thereupon punching the strip including the embryo jaws of the second element away from the endmost element in a direction parallel to the direction of the tape, clamping the jaws of the endmost element on the tape, feeding the tape in longitudinal direction, again feeding the strip to bring the next jaws astride the tape, and so on.

22. In the manufacture of slide fasteners, the method which includes forming a continuous strip of metal having successive closely adjacent projections on one side and having successive closely adjacent recesses on the opposite side, the spacing between the successive projections and the successive recesses being only a fraction of the length of the elements to be formed therefrom and corresponding to the spacing of a series of embryo fastener elements with the embryo head of each element nested fully within and filling the space between the embryo spread jaws of the next embryo element, feeding the strip longitudinally with the embryo elements pointing jaw first toward a transversely extending tape until the jaws at the end of the strip are astride the tape, thereupon punching the strip including the embryo jaws of the second element away from the endmost element in a direction parallel to the direction of the tape, clamping the jaws of the endmost element on the tape, feeding the strip to bring the next jaws astride the tape, and so on.

23. A step product used in the manufacture of slide fastener elements, said step product comprising a flattened strip of metal having closely spaced interlocking means at the top and bottom, the exterior edges of the strip having closely spaced notched or serrations to conform to the outer ends of embryo spread jaws, said spacing being only a fraction of the length of the elements, the strip providing metal for a series of embryo fastener elements with the embryo head of one embryo element nested within and filling the space between the embryo spread jaws of the next embryo element, whereby the elements may be formed from the strip without substantial waste or scrap material, the interlocking means comprising closely spaced projections at the top of the strip and closely spaced recesses at the bottom of the strip, the top of the strip having troughs or indentations bordering part of the periphery of the projections at the top of the strip.

CERTIFICATE OF CORRECTION.

Patent No. 2,221,740.

November 12, 1940.

FREDERICK ULRICH.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 4, first column, line 75, claim 10, after "embryo" second occurrence, insert --element--; and second column, line 1, same claim, for "the" first occurrence, read --and--; line 38, for "geing" read --being--; page 5, second column, line 54, for "notched" read --notches--; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 31st day of December, A. D. 1940.

(Seal)

Henry Van Arsdale,
Acting Commissioner of Patents.

DISCLAIMER

2,221,740.—*Frederick Ulrich*, Bayonne, N. J. MANUFACTURE OF SLIDE FASTENER ELEMENTS. Patent dated Nov. 12, 1940. Disclaimer filed Aug. 8, 1947, by the assignee, *Conmar Products Corporation*.
Hereby enters this disclaimer to claims 3, 5, 6, 7, and 8.
[*Official Gazette September 23, 1947.*]

DEFENDANT'S EXHIBIT "E"

G. Sundback Patent No. 1,331,884

Filed Mar. 16, 1916

Patented Feb. 24, 1920



G. SUNDBACK.
SHEET METAL FORMING AND SETTING MACHINE.
APPLICATION FILED MAR. 16, 1916.

1,331,884.

Patented Feb. 24, 1920.
11 SHEETS—SHEET 1.

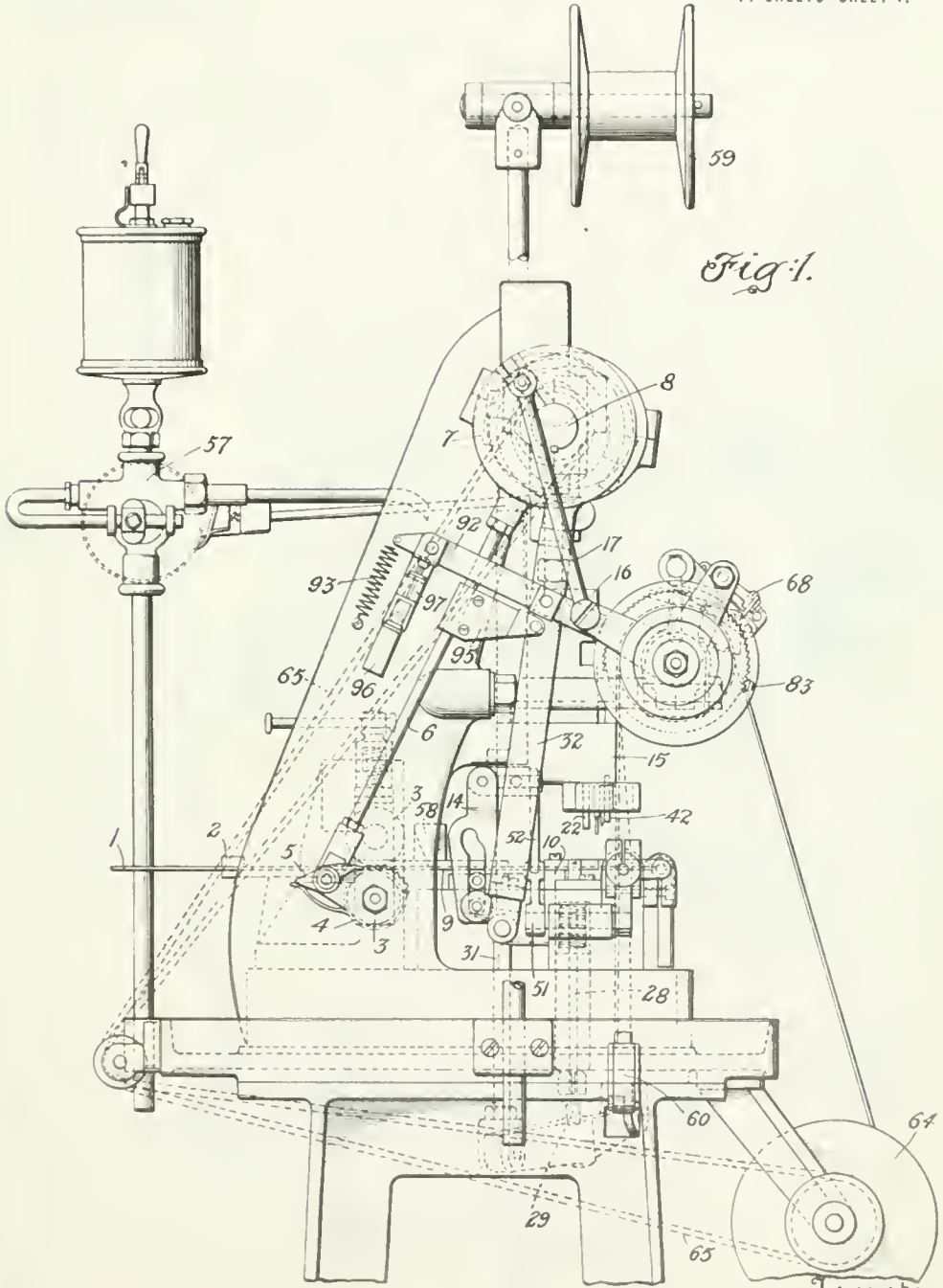


Fig. 1.

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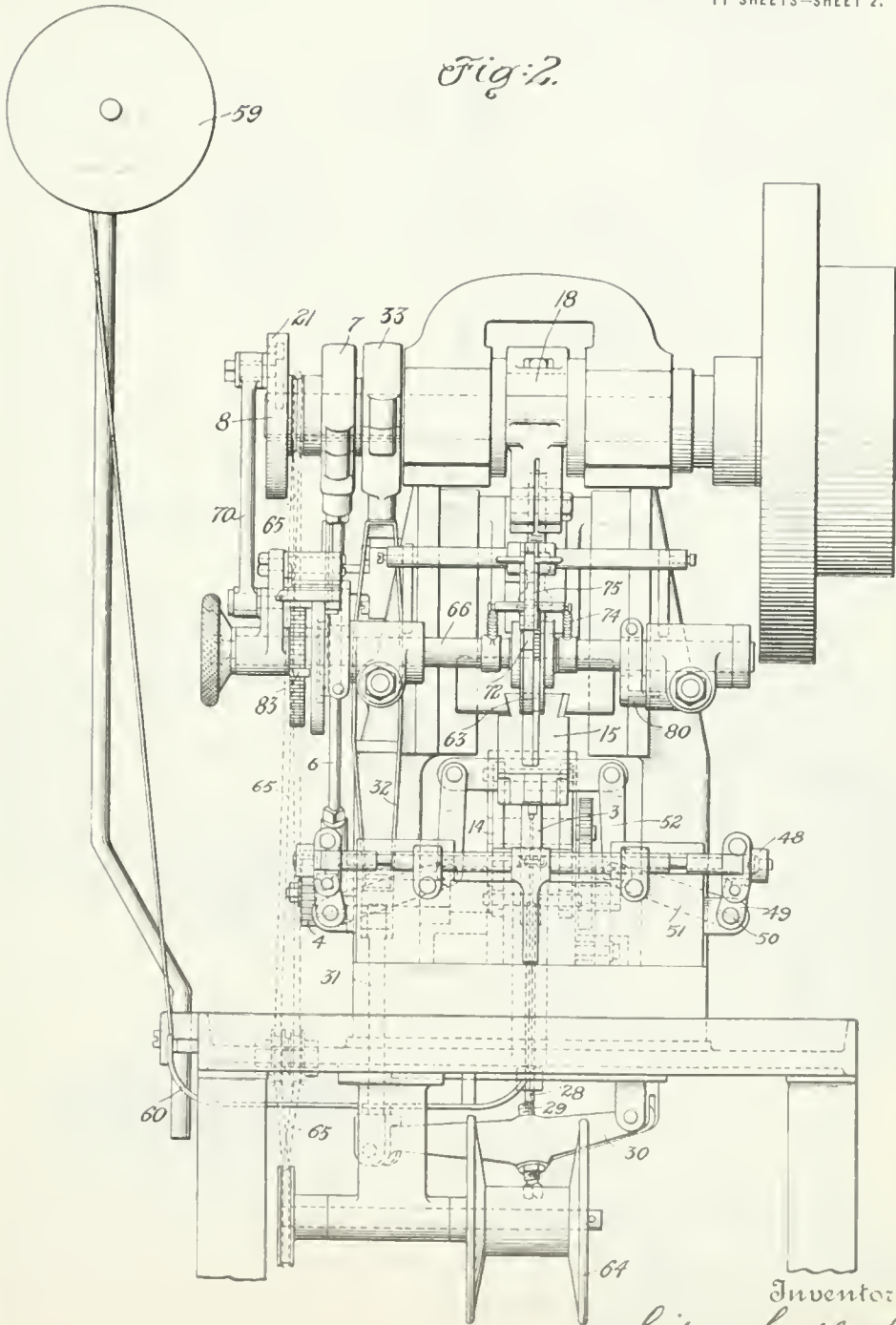
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11 SHEETS—SHEET 2.

Fig. 2.



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11 SHEETS—SHEET 3.

Fig. 5.

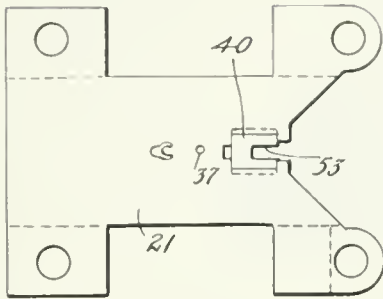


Fig. 3.

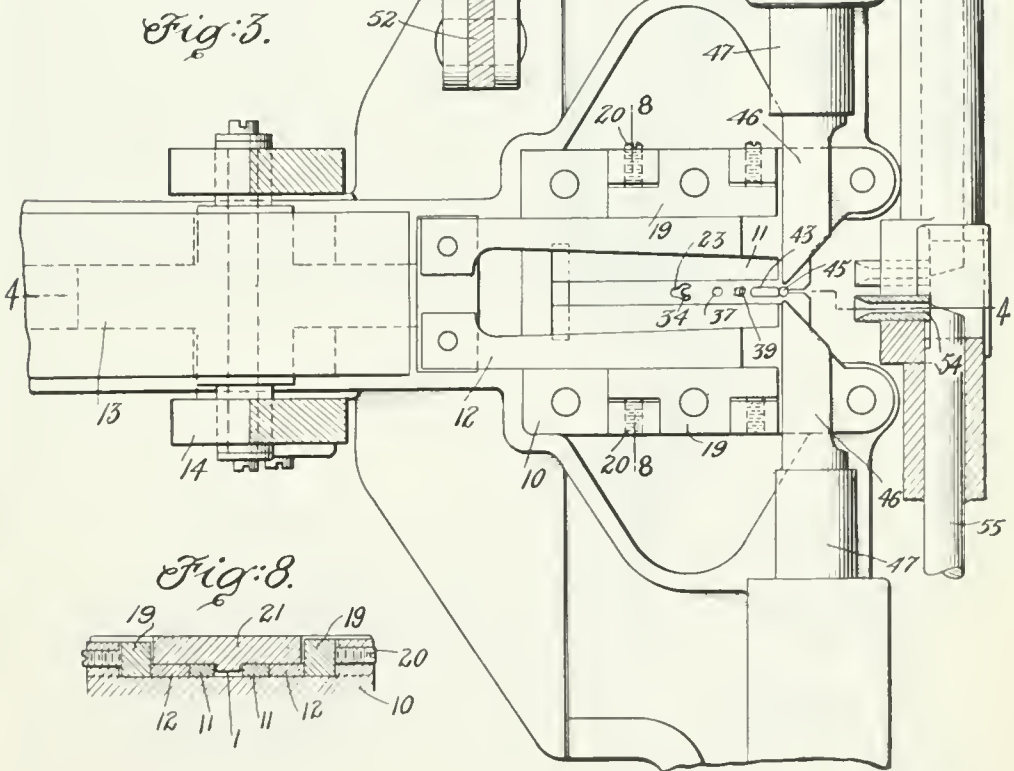
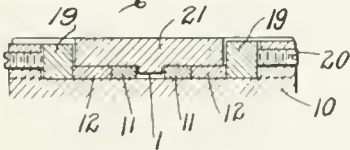


Fig. 8.



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11 SHEETS—SHEET 4.

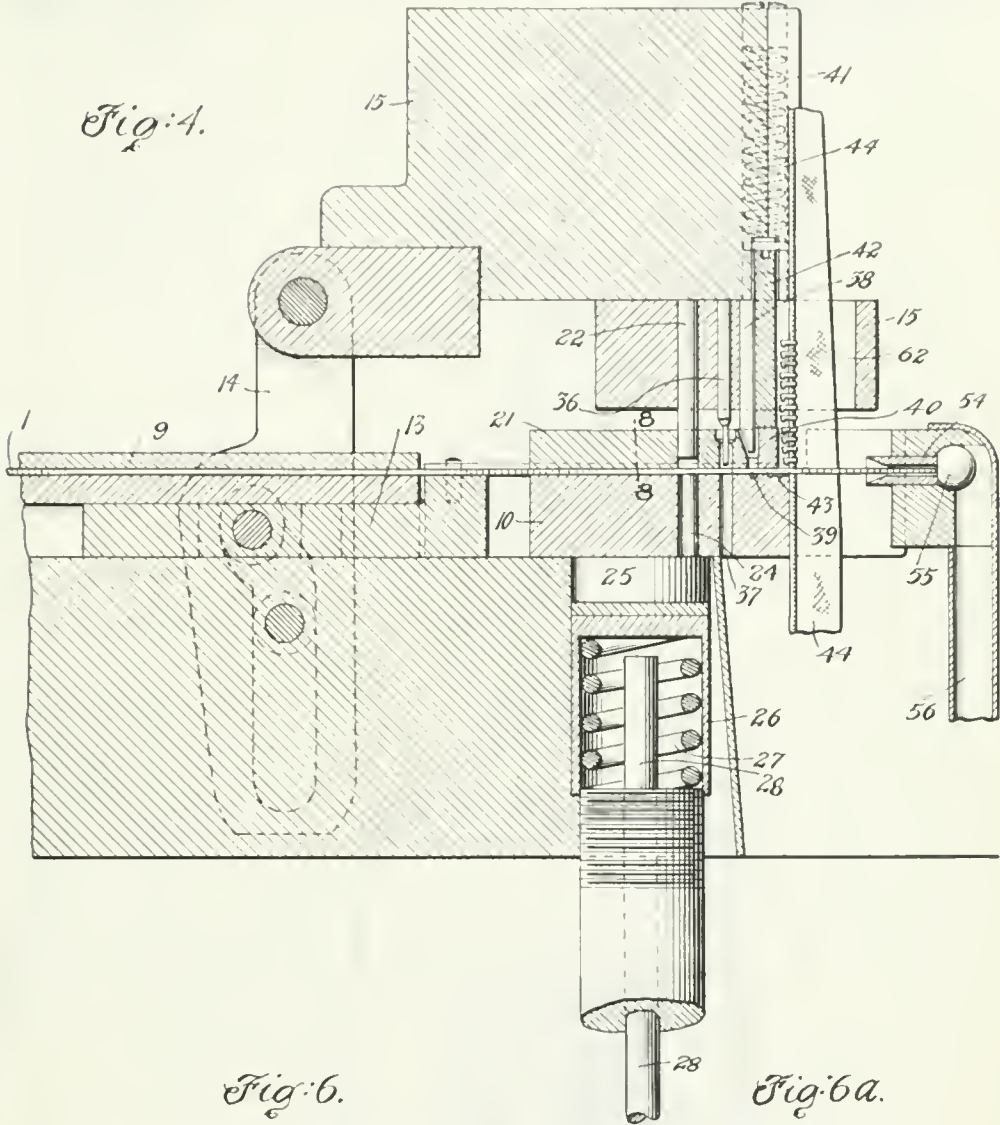


Fig:4.



Fig:7



Fig:6a.

Fig:7a. Inventor

Gideon Sundback,

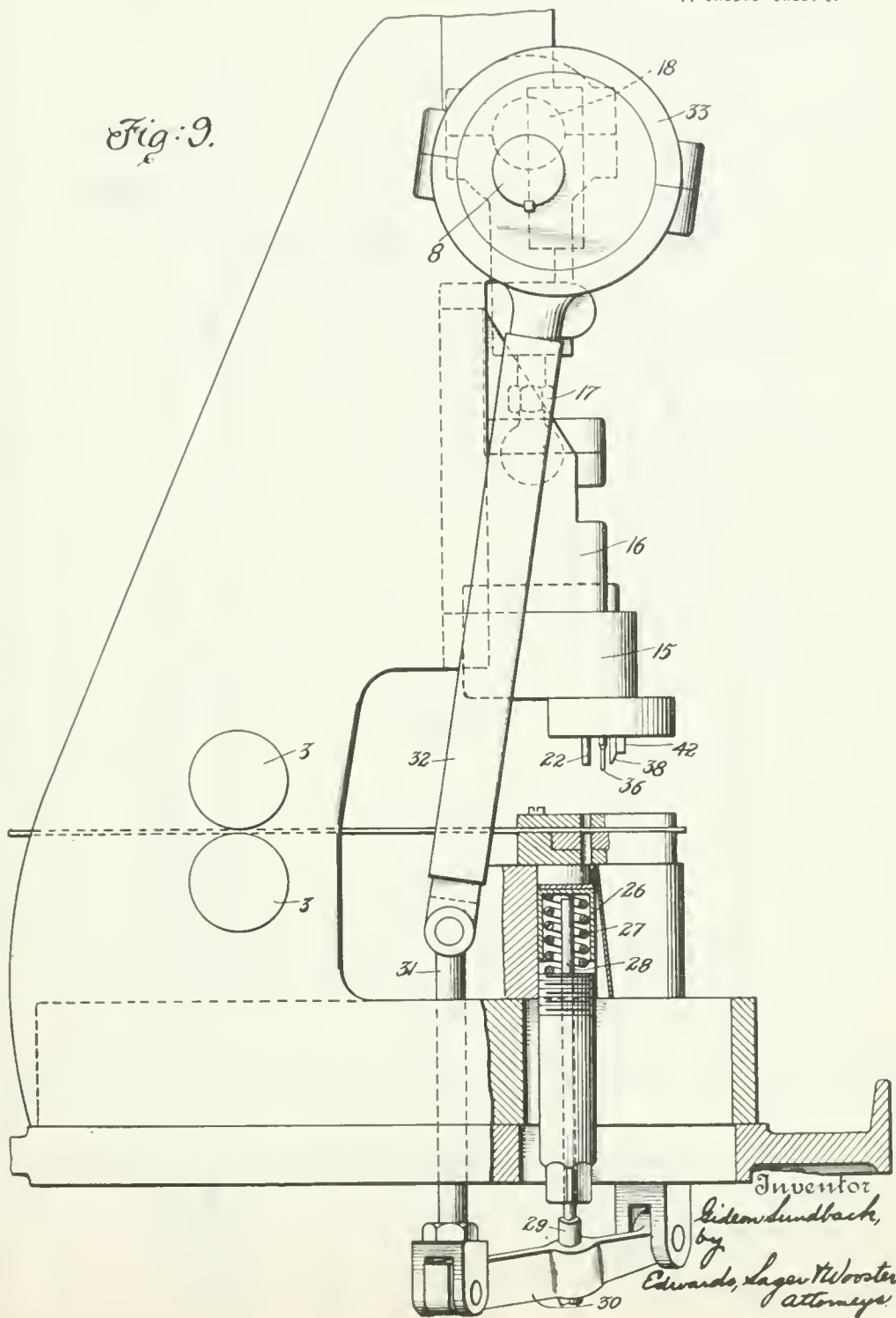
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11 SHEETS—SHEET 5.

Fig. 9.

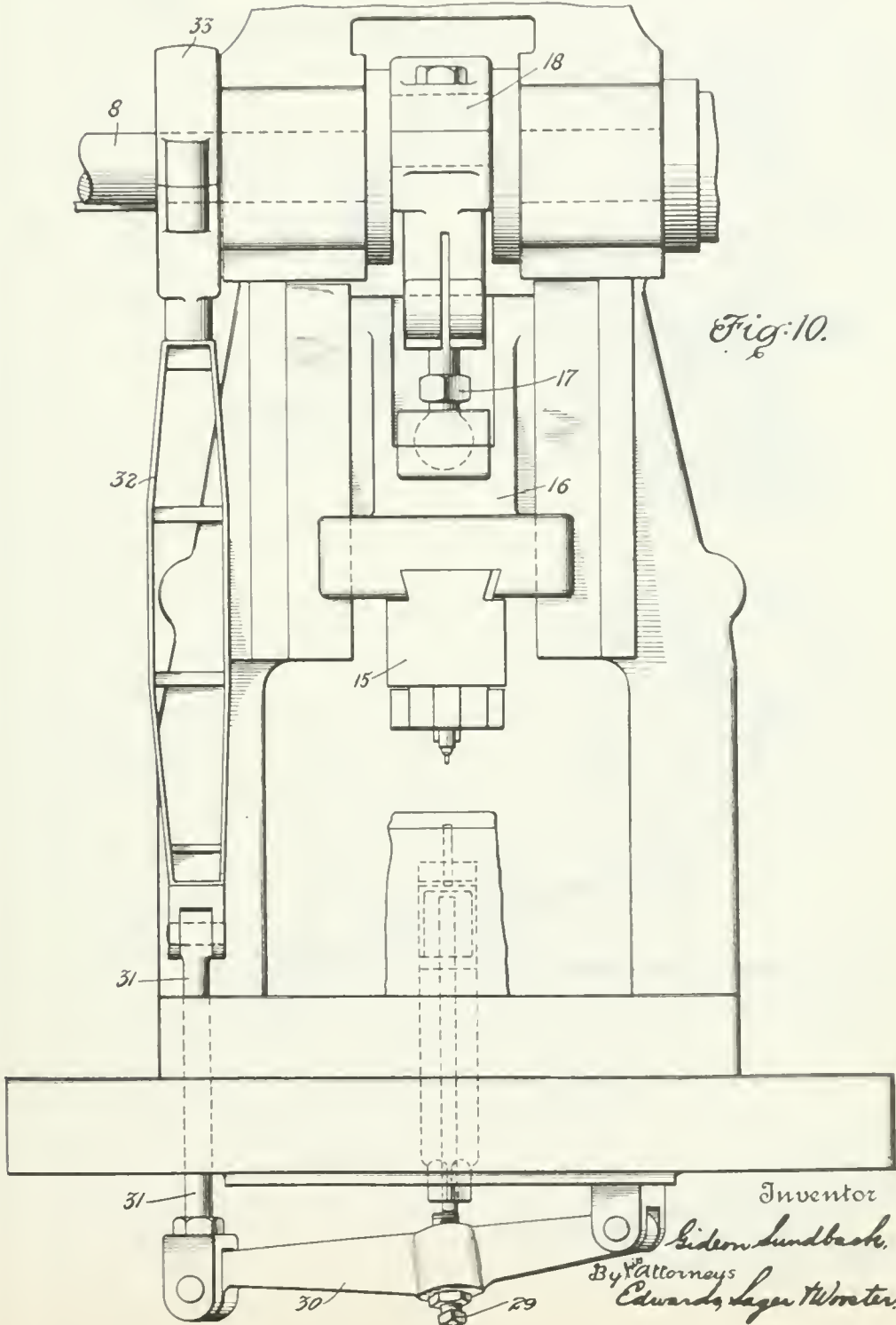


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1,331,884.



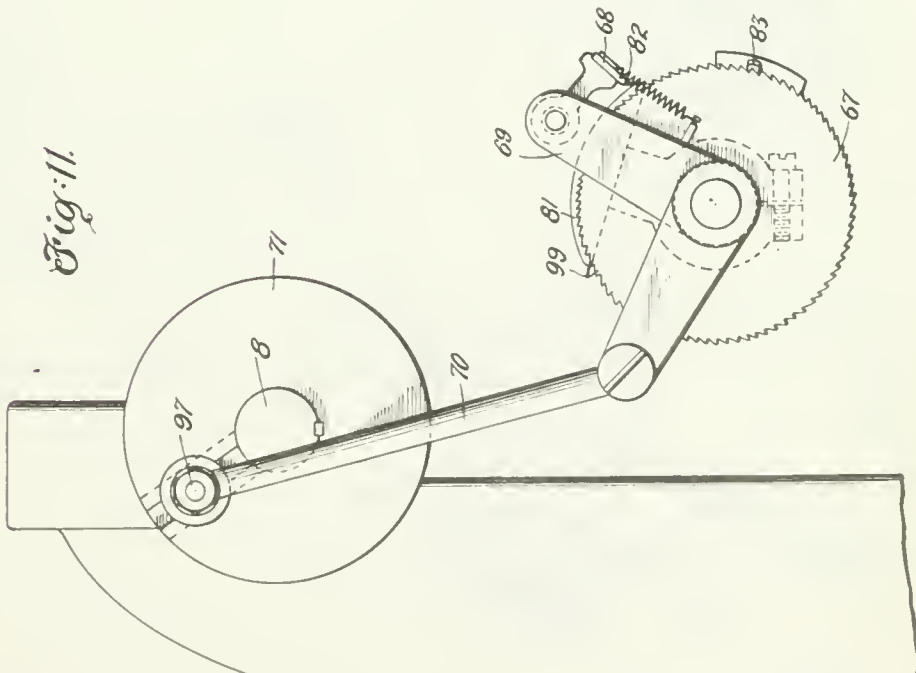
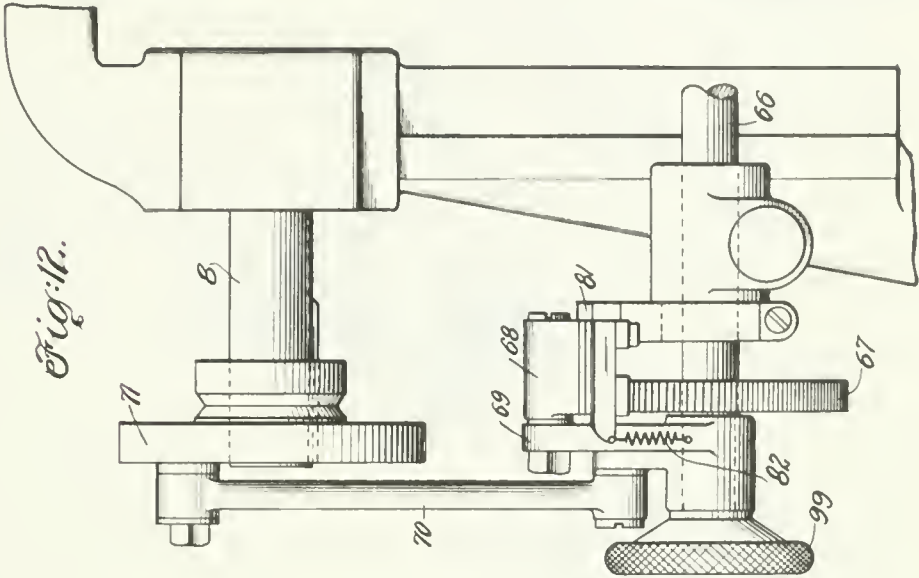
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11 SHEETS—SHEET 7.



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1,331,884.

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11 SHEETS—SHEET 8.

Fig. A.

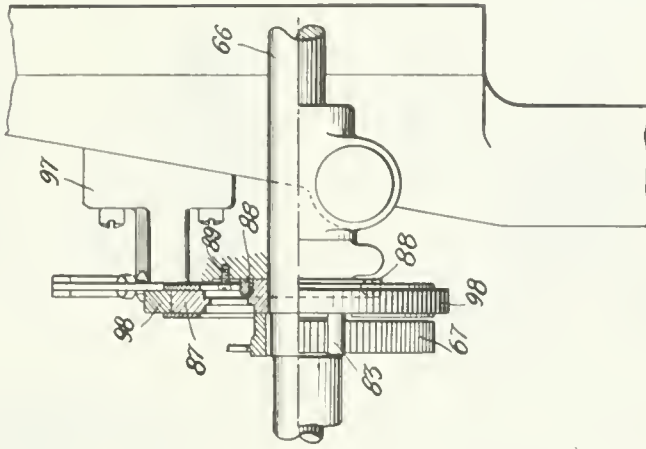
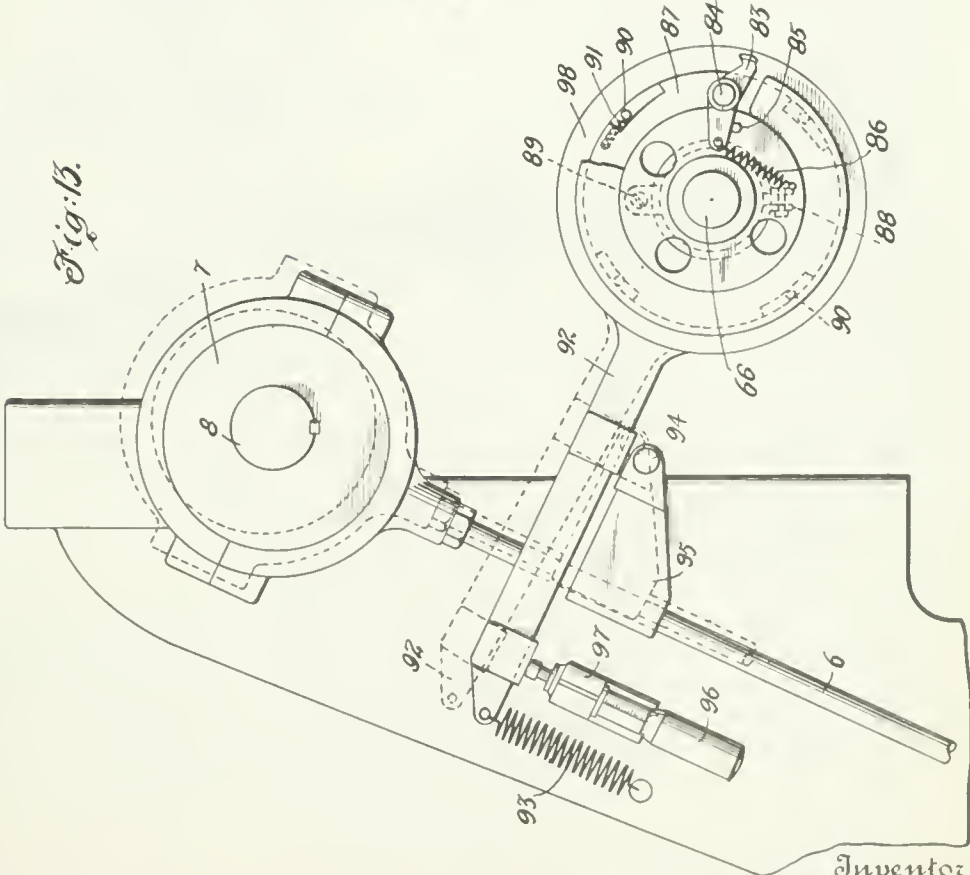


Fig. B.



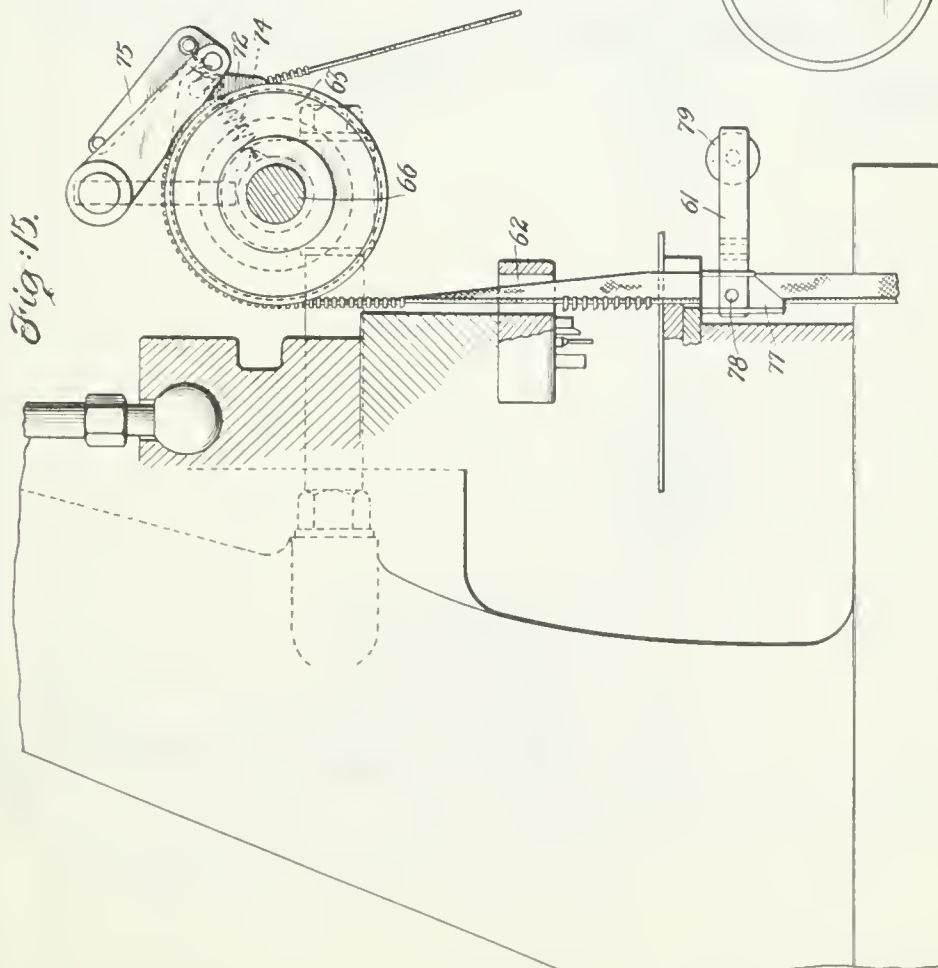
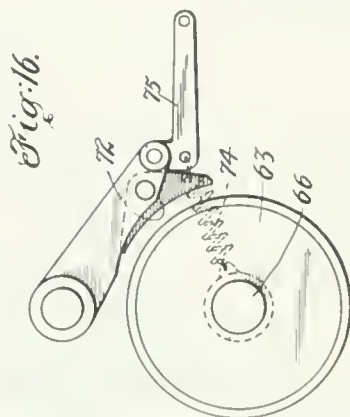
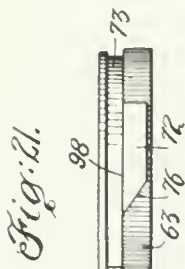
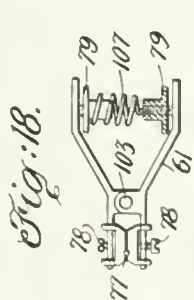
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G. SUNDBACK.
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 APPLICATION FILED MAR. 16, 1916.

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Patented Feb. 24, 1920.

11 SHEETS—SHEET 9.



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APPLICATION FILED MAR. 16, 1916.

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Patented Feb. 24, 1920.

11 SHEETS—SHEET 10.

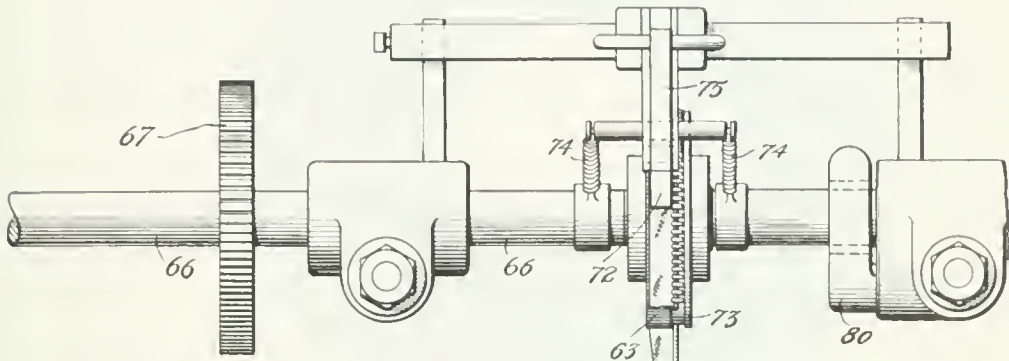
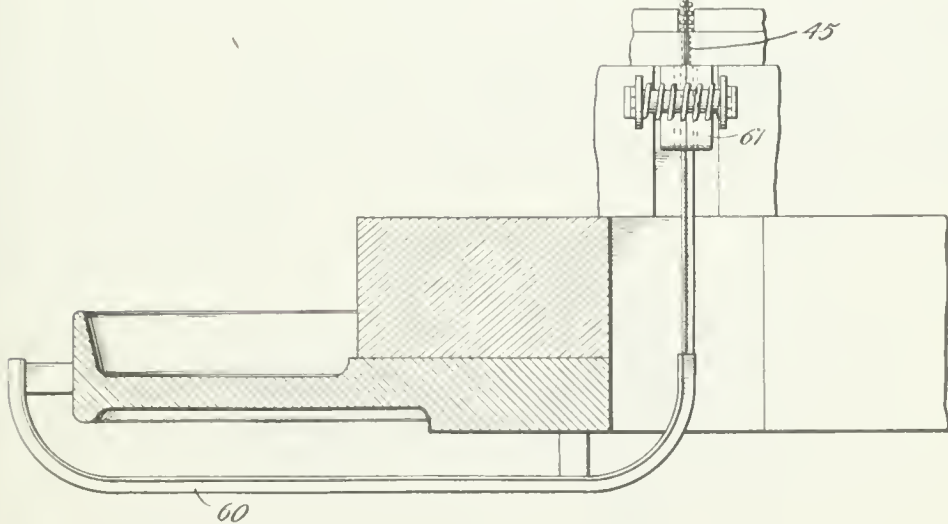


Fig. 17.



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G. SUNDBACK.
 SHEET METAL FORMING AND SETTING MACHINE.
 APPLICATION FILED MAR. 16, 1916.

1,331,884.

Patented Feb. 24, 1920.

11 SHEETS—SHEET 11.

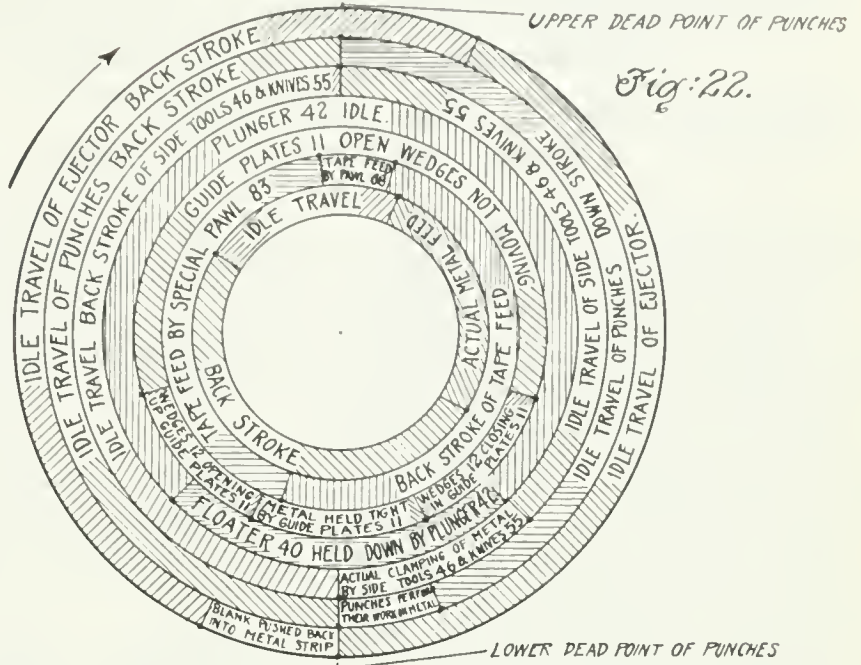


Fig: 22.

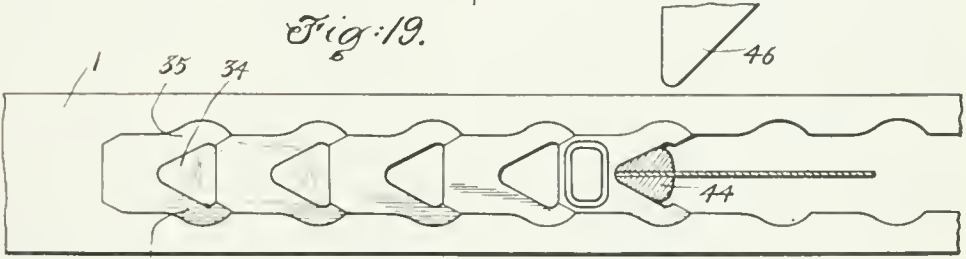


Fig: 19.

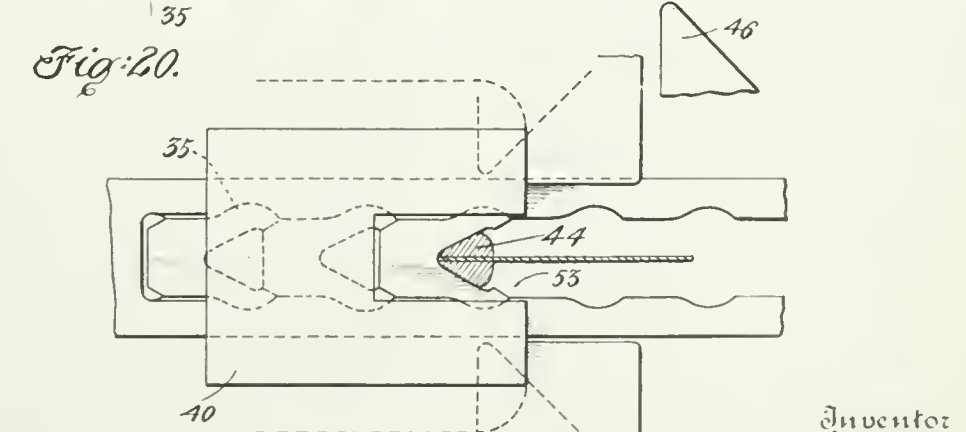


Fig: 20.

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UNITED STATES PATENT OFFICE.

GIDEON SUNDBACK, OF MEADVILLE, PENNSYLVANIA, ASSIGNOR TO HOOKLESS FASTENER COMPANY, A CORPORATION OF PENNSYLVANIA.

SHEET-METAL FORMING AND SETTING MACHINE.

1,331,884.

Specification of Letters Patent.

Patented Feb. 24, 1920.

Application filed March 16, 1916. Serial No. 84,550.

To all whom it may concern:

Be it known that I, GIDEON SUNDBACK, a subject of the King of Sweden, residing at Meadville, in the county of Crawford and State of Pennsylvania, have invented certain new and useful Improvements in Sheet-Metal Forming and Setting Machines, of which the following is a full, clear, and exact specification.

This invention relates to a machine for forming and setting metal punchings, and has particular reference to a special form of power press with automatic blank feeding means whereby punchings are formed from a strip blank and set on a carrying element.

The machine illustrated herein is intended for forming the fastener members shown in my Patent 1,219,881, dated March 20, 1917, and affixing them to the corded fabric tape shown therein. The fastener members consist of separated jaws and an interlocking member having a recess on one side and a head on the other, these respective recesses and heads being arranged on a pair of tapes so as to alternately interlock.

The machine of the present invention has for its object to form and set these fastener members on the tape with one handling of the material, and a further object of the invention is to enable the machine to automatically set these interlocking members in separated groups of a predetermined number each, so that the tape can be cut apart to provide fasteners of desired length.

The present invention is not limited in its broad aspects to the production of the particular fastener members referred to, nor to the setting of such members on tapes, but is of general application wherever it is desired to automatically and cheaply form large numbers of like parts, and to set them on a suitable carrier element.

A feature of novelty in the invention resides in the construction whereby the punching is completely separated from the blank and is then immediately replaced therein so that it can be further fed for the subsequent operations, of shaping and setting, or the latter alone, by the blank feed without applying the setting tools directly to the punching. Owing to the necessity of making the fastener members as nearly alike as

possible, in order that they will lock and unlock properly when set on the tapes, it is necessary to have the utmost accuracy in the shaping and setting operations subsequently to the punching out from the blank, and by causing the punching to be replaced in the blank and controlled thereby, it is possible to apply pressure to the punching through the blank so as to hold the punching firmly during the shaping operation, and then by a further side punching operation through the blank, the jaws are firmly set on the carrier element or tape without leaving any tool marks upon the jaw members themselves. After the jaw members are set, the residue of the blank is fed out in one place and the carrier element having the jaw members affixed thereto is fed out in another direction. The avoidance of tool marks on the jaw members themselves is of decided advantage, since it cheapens the subsequent finishing required in the finished fastener.

In carrying out the invention, various novel combinations and sub-combinations in the controlling, feeding, punching, pressing and setting mechanisms have been secured, all of which will be more fully understood in connection with the description of the accompanying drawings, wherein

Figure 1 is a side elevation of a machine;

Fig. 2 is a front elevation;

Fig. 3 is a plan view showing the die and die block;

Fig. 4 is a vertical section on the line 4—4 of Fig. 3;

Figs. 5, 6, 6^a, 7 and 7^a are details of the top or stripper plate, which holds the blank down on the dies;

Fig. 8 is a cross-section on the line 8—8 of Fig. 3 showing the passageway for the blank;

Figs. 9 and 10 are side and front elevations, respectively, showing the movements by which the punching is pressed back into the blank as the punchers are withdrawn;

Fig. 11 is a side view of the tape feeding mechanism;

Fig. 12 is a front view of the tape feeding mechanism;

Fig. 13 is a side elevation showing a further detail of the tape feed;

Fig. 14 is a further detail front view;

Figs. 15 and 16 are additional detail side views of the tape feed;

Fig. 17 is a front view of Fig. 15;

Fig. 18 is a plan view of the tape tension;

Fig. 19 is a plan view on an enlarged scale showing the blank and the punchings in different stages of progress;

Fig. 20 is an enlarged top view showing the blank under a yielding presser plate permitting the punchings to be fed forward with the blank without disengagement;

Fig. 21 shows an additional detail of the tape feed, and

Fig. 22 is a timing diagram.

1 represents a metal blank, which is preferably in the form of a flat strip, and is fed into the machine from the rear toward the front. The machine is applicable to separate blanks as well as to a continuous strip, but in making very small fasteners such as herein shown, which are approximately one-eighth inch long and one-sixteenth inch wide when fastened and applied to the tape, it is preferable to employ a strip. Referring to Figs. 1 and 4, the blank 1 enters guide 2 and passes through feed rolls 3, 3, then through guide 9 to the die unit 10, and between the side guide plate 11 (see Figs. 3 and 8). The guide plates 11 are controlled by wedges 12 (see Figs. 3 and 8). The wedges 12 are operated through a slide 13 (see Figs. 3 and 4), and cam plates 14 by the punch head 15, held in the slide 16 (see Figs. 9 and 10) and moved up and down through connecting rod 17 and crank 18 on the main shaft 8. The feed rolls 3, 3 are operated by ratchet 4, pawl 5 and connecting rod 6 from eccentric 7 mounted on the main shaft 8 (see Figs. 1 and 2).

22 is the blanking punch which punches out the entire member and the piece 34 into die 23 (see Figs. 3 and 4). As the punch 22 draws out of the die, the plunger 2' carried by plunger holder 25 and sleeve 26, is actuated by spring 27 to press the punchings back into original place in the metal blank 1. The piece 34 (Fig. 19) lies in the blank between the jaws 35 of the punching. This scrap piece 34 is pushed out of the blank 1 by punch 36 (see Fig. 4) into the hole 37 in die unit 10. The next step is to press or form the punching in its final form ready to be clamped on the tape, and this is effected by punch 38 and recess 39 in die unit 10 (Figs. 4 and 5).

On the down stroke of slide 16, as the punches are nearing the blank, the cam plates 14 (see Fig. 3) draw the wedges 12 toward the back, pressing the guide plates 11 toward each other with the blank in between, thus holding the blank firmly in place until released by the forward movement of the wedges 12 on the up stroke of slide 16. Figs. 3 and 4 show the position at the mo-

ment the clamping movement of the guide plates 11 has been effected. To allow for wear and variation in the width of the blank 1, the space between the guide plates 11 is adjustable by blocks 19 and set screws 20 (see Fig. 3).

The function of the guide plates 11 is of vital importance. At the time of punching, the two plates hold the material firmly against spreading and distortion either of the punching or of the blank. This enables the subsequent operations on the punching to be controlled through the blank, and insures such perfect shape of the finished punchings and correct positioning thereof in the dies, as to produce a highly uniform and symmetrical fastener member and product. When the guide plates 11 draw tight around the blank 1, they not only bring the blank into a central position over the dies, but force the punchings, if they should happen to get out of place, into correct position lengthwise of the blank. The guide plates spread apart during the feed and allow an easy and free movement of the blank. It also allows the interlocking or projecting end of the fastener punching to lift up out of the recess 39 (see Fig. 4) in die unit 10 after the impression of punch 38.

At this time the blank 1, after reaching die unit 10 is confined between die unit 10 on the bottom and stripper plate 21 on the top (see Fig. 8).

In order to avoid reliance solely upon spring 27 to press the punching back into its original place in the blank as punch 22 withdraws, a positive movement is provided. Rod 28 in addition to spring 27 exerts pressure on sleeve 26 thus forcing the punching into its place in the blank. Rod 28 is acted upon through screw 29 in lever 30 (see Figs. 9 and 10) and connecting links 31, 32 from eccentric 33 on main shaft 8. Upon the return of the punching to its proper place in the blank and with the coöperation of the side guides 11, top of die unit 10 and stripper plate 21, the punching can now be fed forward by the blank feed rolls 3, 3, without any danger of becoming displaced. A displacement at this time would cause much trouble, because of the extreme accuracy required in the finished fastener members of such small dimensions.

The blank after return of the punching is fed forward as above stated so that the scrap piece 34 can be pushed out of the blank 1 by punch 36, and then the punching is pressed into recess 39 in die unit 10 by punch 38 to form the interlocking recess and projection. At this time, it is necessary to hold the blank and punching down onto the face of the die unit 10 and also to hold it against lateral spreading by contraction of the side guides 11. The stripper plate 21 partly performs this function, but

in addition there is provided a yielding presser or floater 40 (see Figs. 5, 6, 7, 20) which is mounted in stripper plate 21 and bears down on the jaws 35 of the punching, and on the blank 1, by means of springs 41 (see Fig. 4) and plunger 42. This plunger 42 is timed and adjusted to commence pressure as soon as the forward movement of the blank stops, and can be adjusted to exert a positive pressure upon the blank and punching by contacting with a lug on punch block 15 when the punches are in their lowest position. Thus the blank and punching are firmly held in position while the transversely elongated recess and projection are formed by the punch 38 and die recess 39.

When the blank 1, still carrying the fastener member, which is now finished and ready to be pressed on the tape, is again fed forward, the floater or presser 40 yields upwardly so as to permit the projection of the fastener member to lift out of the die recess 39 so that it can be carried forward into recess 43 (Figs. 3 and 4) ready to be set. To prevent the fastener member punching from lifting out of the blank 1 altogether, the lift of the yielding presser 40 is limited as shown in Fig. 7^a. Figs. 6 and 6^a show the presser 40 at its lowest position and Figs. 7 and 7^a show it at its highest position.

The finished punching is now carried forward by the next motions of the feed rolls 3, 3 until it reaches the position where the jaws 35 straddle the corded edge of the tape 44 (see Fig. 19). The tape 44 is fed intermittently upward and at right angles to the blank feed through the hole and slot 45 (see Figs. 3 and 4) in die unit 10. In this position the jaws 35 are clamped around the corded edge of the tape by side tools 46 (see Figs. 3 and 19) which simultaneously press toward each other on the outside of the blank 1, while the formed jaw member is being held between the top of the die unit 10 and the resilient presser 40 (see Figs. 3 and 4). Each of the side tools 46, which set the jaw members on the carrier element, tape, or stringer, is held in and moved through the slide 47 which is connected at 48 by lever 49, rock shaft 50, arm 51, and link 52 to punch block 15 (see Fig. 2). When the clamping movement is completed, the tape feeds up and lifts the jaw member clamped to its corded edge, out of the residue of the blank 1, the tape and attached jaw member passing through slot 53 in floater 40 (see Fig. 5). There now remains of the blank 1 only the two edges, which are fed through the tubes 54 (see Figs. 3 and 4) and cut into small pieces by knives 55 connected to the actuating heads 48 of the side tools, the pieces falling down through chute 56.

In order to prevent slipping of the feed,

the blank 1 is maintained clean and dry while engaged by the feed rolls 3, 3, and the necessary lubrication of the blank is done after it has passed the feed. This is accomplished by an ordinary oil pump 57 (see Fig. 1) which drips the lubricant down in funnel 58 mounted centrally over the blank 1. Soap and water is preferably used as a lubricant, because it does not leave a stain on a fabric tape.

The supply of tape is wound on spool 59 (Fig. 1) and passes from there through passageway 60 under the bed of the machine and up through tension 61 (see Figs. 15 and 17), also passing through the hole and slot 45 (see Fig. 3) in the die unit 10. The tape then passes between the sides of the blank 1 where the interlocking members are clamped around the corded edge, and then leads through slot 62 in the punch holder and then around disk 63 (see Figs. 15 and 17). Then the stringer or tape leads to spool 64 (see Figs. 1 and 2) on which it is wound up by belt 65 driven from the main shaft.

The movements of the tape are controlled by the disk 63 on shaft 66. Shaft 66 is driven by ratchet 67 (see Figs. 17, 11 and 12) through pawl 68, bell crank 69 and pitman 70 connected to crank plate 71 by radially adjustable crank pin 97 mounted on the main shaft 8. The grip of disk 63 on the tape is produced by the sliding shoe 72 (see Figs. 15, 16 and 17) which presses the tape against a knurled or roughened periphery of disk 63. The grip is also obtained by pressure of the tape on the knurled disk 63 produced by the tension 61, whose function is to hold the tape taut between the die unit 10 and the tape feed control at disk 63. Disk 63 has a groove 73 for the jaw members on the stringer, which groove serves as a leader and prevents the tape from lateral displacement while passing around the disk 63. Sliding shoe 72 is pressed against the disk 63 by springs 74, whose tension is released by lever 75 in the position shown in Fig. 16. The springs 74 are made of such length as to permit the shoe 72 to be lifted out of contact with the disk 63, (see Fig. 16) to facilitate the threading or removal of the tape between the disk and the shoe.

Fig. 21 shows the position of the shoe 72 relatively to the disk 63. By reason of the shoe being pointed at the tape entering end, producing friction between the slanting edge 76 and the tape sliding under shoe 72, the tape tends to follow the direction of edge 76, or to work itself over to the side. Thus the corded edge of the tape, with or without metal, is sliding with considerable pressure against the edges 98 of the shoe 72, and the edges of the groove in disk 63, thus placing the grip on the tape close to

the corded edge. The corded tape is made so that the corded edge is shorter than the free edge, the latter being wavy, so that the corded edge thus takes practically all of the strain of the feed. It is therefore necessary in order to secure even and uniform spacing of the jaw members, that the tape be gripped in feeding close to the corded edge. The clamping of the jaw members on the tape produces some elongation of the corded edge of the tape.

The slanting edge 76 has the additional function of preventing puckering or doubling up of the tape in front of shoe 72. This is because the point of shoe 72 slides over the tape near the corded edge, at a point where the tape is not only taut but is held firmly by its attachment to the cord, so that as the tape glides in under the shoe, the edge 76 flattens out any wrinkles in the same manner as the divergent edges of a flat iron would do.

Instead of the shoe 72, a slightly conical idler roller having its high edge engaging the corded edge of the tape can be used to press the tape against the knurled periphery of disk 63. This idler roller being controlled by springs 74.

The tape tension 61 (see Figs. 15 and 18) comprises two tension plates 77 having grooves for the cord which provide guiding means as well as friction surface. These plates are mounted loosely on the ends of jaws 61 which are pivotally connected at 103 and normally pressed apart by spring 107 mounted between screw bushings 79 which can be turned so as to vary the spring pressure at plates 77. The pressure on the jaws is transmitted through the screw 78 disposed at about the center of the plates 77, so that the plates can rock slightly on the ends of the screws and adjust themselves to irregularities in the tape without affecting the friction. In order to prevent puckering, the plates 77 at the lower or entering end are tapered or cut away so as to smooth out a puckered or wrinkled tape in the same manner as above described with respect to edge 76 of shoe 72. The tape tension is not fastened to the machine, but is held in place by the friction of the tape which in its upward motion holds the tension against the lower side of die unit 10. 80 (see Fig. 17) is a brake holding the shaft 66 and tape roll 63 against movement except through ratchet 67.

The throw of pawl 68 (Figs. 11 and 12) which drives the tape feeding shaft 66 through ratchet 67 is made longer than is necessary to feed the required length of tape for proper spacing. To regulate the spacing, (see Fig. 11) a shield 81 is provided which prevents the pawl 68 from dropping on the teeth of ratchet 67 until the desired throw of shaft 66 has been provided. The spring 82 pushes the pawl into engagement

with the teeth as soon as the pawl clears the shield 81. The shield 81 is adjustable around shaft 66 so as to control the number of teeth pawl 68 will feed.

The present machine is designed to fix a predetermined number of equally spaced jaw members on a given length of tape, and then to feed a blank length of tape to enable the fasteners to be cut apart to receive the additional sliding member not shown herein and also end stop devices. The pawl 68 automatically feeds the excess length of tape required for this purpose, through a second pawl 83 (see Figs. 13 and 14) pivoted on pin 84 and held against pin 85 by spring 86. Pawl 83 is mounted on the friction ratchet 87, mounted between ratchet 67 and shield 81 with a bearing fit on shaft 66. The secondary pawl 83 thus extends over teeth of ratchet 67, and the friction ratchet 87 is held against accidental rotary movement by brake 88 (see Figs. 13 and 14) fastened to shield 81 by screw 89. As the secondary pawl 83 is carried around on the friction ratchet 87, it reaches the position where pawl 68 at the rear end of its stroke rides over it. At the beginning of the forward movement pawl 68 then catches the secondary pawl 83. The spring 86 (see Fig. 13) yields to the pressure of pawl 68, allowing the secondary pawl 83 to swing until its forward edge engages the teeth of ratchet 67. The swinging movement being arrested, continued pressure of pawl 68 carries with it the secondary pawl 83, the two ratchets 87 and 67, the shaft 66 and the tape. The ratchet 87 is moved by ring 98 (see Fig. 13) through rolls 90 and spring 91. Arm 92 which operates ring 98 is operated by the spring 93 and the pin 94 in clamp 95 attached to the connecting rod 6, and operated by eccentric 7. The stroke of arm 92 is adjustable by the micrometer head 96 in bracket 97 (see Fig. 14) attached to the frame of the machine. The adjustment ranges from a maximum length equal to the throw of connecting rod 6 to a very small minimum. Thus the secondary pawl 83, carried around by the friction ratchet 87, is made to complete a single revolution during a predetermined number of operations of the machine according to the setting of micrometer 96. When the secondary pawl 83 is effective, it will be seen that a long throw will be given the tape feed, equal to the full stroke of pawl 68.

If not much variation in the lengths of fasteners is required, the friction ratchet with secondary pawl 83 can be dispensed with. In this case the ratchet 67 is provided with a high tooth 99 (see Fig. 11) which will project up above the surface of shield 81 so as to be caught by pawl 82 during each revolution of ratchet 67. By changing the throw of pawl 68, the length of the metal part of

the fastener can be varied to a limited extent without changing the over-all length including the tape ends. To materially change the length of the fastener the number of teeth in the ratchet 67 can be varied, and also the diameter of feed disk 63.

The fastener members as affixed to the tape may require further finishing to remove burrs, but this can be done after the members are attached to the tape much more cheaply than by additional finishing operations in the machine before the members are pressed on the tape.

While the machine has been described with reference to the making of the members from a strip, the novel principles of the invention are applicable to the feeding of separate pieces, and it will be obvious that in applying these broad features of the invention to other machines some of the parts herein described may be modified or omitted entirely without departing from the invention, and all such modifications will be within the scope of the appended claims.

Having thus described my invention, I declare that what I claim as new and desire to secure by Letters Patent, is:—

1. The combination of means for cutting a flat member having separated compressible jaws at one end, means for forming a recess and head on the other end, means for feeding the jaw end astride a carrier, means for feeding the carrier, and means for pressing the jaws together on the carrier.

2. The combination of means for cutting a flat member having separated compressible jaws at one end, means for forming a recess and head on the other end, means for feeding the jaw member adjacent a carrier, and means for pressing the jaws together on the carrier through interposed means preventing tool marking of the jaw member.

3. The combination with means for punching out a blank, of means for replacing the punching in the blank, means for feeding the blank and punching forward, means for shaping the punching, means for clamping the punching to a carrier, and means for separately feeding out the blank.

4. The combination with blank feeding means of complete punching out means, means for replacing the punching in original position in the blank to permit it to be further fed by said blank feeding means, means for feeding a carrier, and means for setting the punching on the carrier by pressure through the blank after the punching has been replaced in the blank and fed away from said punching out means.

5. The combination with blank feeding means, of means for punching out and replacing in the blank a jaw member, means for shaping said jaw member, means for feeding a carrier member between the jaws

of said shaped member while held in the blank, and means acting on said blank for setting said jaw member on said carrier member.

6. The combination with blank feeding 70 means, of means for punching out and replacing in the blank a jaw member, means for shaping said jaw member, means for feeding a carrier between the jaws of said shaped member while held in the blank, 75 means acting on said blank for setting said jaw member on said carrier member, and means for feeding the carrier member and the attached jaw member away from the blank. 80

7. The combination with means for feeding a blank, of means for forming and replacing a punching in the blank, means for shaping the punching and simultaneously applying pressure to opposite edges of the blank, and means for feeding out the punching and the blank. 85

8. The combination with blank feeding means, of punching means, means for compressing the blank edgewise, means for replacing the punching in the blank, and means for shaping the punching and cooperating means for holding it and the blank against lateral distortion. 90

9. The combination with blank feeding 95 means, of punching means, means for compressing the blank edgewise, means for replacing the punching in the blank, means for shaping the punching and cooperating means for holding it and the blank against lateral distortion, and means for feeding a stringer and setting the shaped punching thereon. 100

10. The combination with blank feeding means, of punching means, means for replacing the punching in the blank, means for feeding a carrier element transversely of the blank and the replaced punching, and means for setting the punching on said carrier element. 105 110

11. The combination with blank feeding means, of means for punching out a member to be set on a carrier element, means for feeding a carrier element to the point of attachment, and setting means acting through an interposed waste part of said blank. 115

12. The combination with a blank and blank feeding means, of means for punching out a member from said blank in condition to be compressed, a compressing tool, said feeding means interposing a portion of the blank between the tool and the punched out member to be compressed. 120

13. The combination with means for feeding a member to a compressing tool, and a compressing tool, of means for guiding a protective piece between the tool and the member to be compressed. 125

14. The combination with a blank and blank feeding means, of a die unit and a 130

- spaced stripper plate, interposed movable side guides, means for punching said blank and means for actuating the guides toward each other to compress the blank at the moment of punching.
15. The combination with a blank and intermittent blank feeding means, of a die unit and a spaced stripper plate, interposed movable side guides, means for punching said blank and means for actuating the guides toward each other to compress the blank at the moment of punching and for spreading the guides while the feed is effective.
16. The combination with intermittent blank feeding means, of punching means, and movable means for clamping the blank against sidewise spreading while being punched and releasing the blank during the blank feeding.
17. The combination with intermittent blank feeding means, of compressing means, means for punching out and replacing the punching in the blank, means for holding said punching under transverse compression while said punching and replacing takes place, means for relieving the compression for the next feed, means for forming a projection on the replaced punching, and yielding means permitting passage of the projection out of its die without displacing it from its blank, upon further feed of the blank.
18. The combination with blank feeding means, of means for punching out a member from the blank, die means for forming a projection on said member simultaneously with means holding the member under side and face compression, and means for relieving both of said compressions to permit said blank feeding means to feed said member out of the projection forming die.
19. The combination with blank feeding means, of a punch for cutting out a member having jaws, means for replacing the punching in the blank and for feeding stepwise forward, a second punch for ejecting a waste piece adjacent the jaws of said member, means for forming a projection in said member, and means for feeding the punching out of the machine.
20. The combination with means for cutting a member having jaws, means for forming a socket in said member, of means for feeding a carrier element transversely between said jaws, and side punches for automatically pressing the jaws toward each other on the edge of said element.
21. The combination with means for cutting a member having jaws, means for forming a socket in said member, of means for feeding a tape between said jaws, and means for pressing the jaws on the edge of the tape.
22. The combination with means for cutting a member having jaws, means for forming a socket in said member, of means for feeding a continuous carrier element between said jaws, means for pressing said jaw members on said carrier element, and means for varying the feed of said continuous carrier element to vary the spacing of said jaw members.
23. The combination with means for cutting a member having jaws and means for forming a socket in said member, of means for feeding a tape between said jaws, means for controlling the tape tension, and means for automatically pressing the jaws on the edge of said tape.
24. The combination with means for feeding attachable jaw and socket elements, clamping means for holding the said elements and setting means for the jaws, of means for feeding a corded tape to receive said jaws on the corded portion of said tape, and tension means engaging the corded portion of said tape.
25. The combination with means for punching out a blank, of means for replacing the punching in the blank, means for feeding the blank and punching forward, means for clamping the punching to a carrier, and means for separating the blank and the attached punchings.
26. The combination with intermittent blank feeding means, of complete punching out means, means for replacing the punching in original position, and movable means for clamping the blank against sidewise spreading while said replacement of the punching takes place.
27. The combination with blank feeding means, of punch and die mechanism for cutting out a jaw member and a waste piece adjacent the jaws of said member, means for replacing the punchings in the blank for the purpose of feeding stepwise forward and means for pushing out said waste piece.
28. The combination with blank feeding means, of means for punching out pieces, comprising a piece having jaws and a waste metal piece, means for replacing the pieces in original position in the blank for further feeding by said blank feeding means, means for separating the jaw piece from the blank and means for removing the waste piece.
29. The combination with blank feeding means, of a punch and die mechanism for cutting out two pieces, means for replacing the pieces in the blank, means for feeding the blank and pieces, means for forming one of said pieces while held in the blank, and means for pushing out the other piece.
30. The combination with means for feeding a sheet metal blank, of means for punching out of said blank and replacing therein a punching having separated jaws at its forward end, and means for attaching said jaws to a carrier element.
31. The combination with means for feed-

ing a sheet metal blank, of means for punching out of said blank and replacing therein a punching having separated jaws at its forward end, and means for transversely compressing said jaws around a carrier element.

32. The combination with means for feeding a sheet metal blank, of means for punching out of said blank and replacing therein a punching having separated jaws at its forward end in a common plane, and means moving parallel to said plane for compressing said jaws toward each other around a carrier element.

33. The combination with means for forming a socket and a projection adjacent the end of a member having jaws, of means for feeding a carrier element between said jaws, and means for automatically pressing the jaws on said element.

34. The combination with means for feeding a member having jaws at its advancing end, of means for intermittently feeding the edge of a carrier element transversely and between said jaws, and means for setting the jaws on the edge of said element.

35. The combination with means for feeding a socket member having jaws at its advancing end, of means for intermittently feeding a tape transversely between said jaws, and means for setting the jaws on said tape.

36. The combination with means for affixing a member to a strip, of means for feeding the strip at one rate to space the members, and means periodically varying the strip feed to group the spaced members.

37. The combination with means for forming and affixing a member to a strip, of means for feeding the strip at one rate to space the members, and means periodically varying the strip feed to group the spaced members.

38. The combination with means for affixing members to a strip, of means for feeding the strip, and means for varying the

strip feed to vary the spacing between the members.

39. The combination with means for affixing groups of members to a strip, of means for varying the spacing between members of a group by varying the feed of the strip.

40. The combination with means for affixing groups of members to a strip, and strip feeding means, of means for feeding an increased length of strip between groups, and means for regulating the number of members in a group.

41. The combination with means for affixing groups of members to a strip, of means for feeding an increased length of strip between groups, and means for regulating the spacing of the members in a group.

42. The combination with means for feeding a strip and means for affixing fastening members on the edge thereof, of actuating means for effecting normal spacing of said members, and additional means for effecting an increased strip feed after a predetermined number of members are affixed.

43. The combination with means for successively affixing jaw members to a corded tape, means for feeding the corded tape between the jaws, means acting on the corded part of the tape to carry the feeding strain, and tension means also acting on the corded part of the tape.

44. The combination with means for feeding a fabric strip step by step, of means for feeding jaw members to and compressing same on the edge of said strip, tension means for the strip, and a fine adjustment for controlling the strip feed for maintaining accuracy of spacing of said jaw members.

In testimony whereof I affix my signature, in presence of two witnesses.

GIDEON SUNDBACK.

Witnesses:

NOEL POUX.

ALGER F. RUSSELL.

DISCLAIMER

1,331,884.—*Gideon Sundback*, Meadville, Pa. SHEET-METAL FORMING AND SETTING MACHINE. Patent dated February 24, 1920. Disclaimer filed January 30, 1933, by the assignee, *Hookless Fastener Company*.

Therefore disclaims:

(a) From the scope of the claim numbered 34, any combination except one in which the member having jaws at its advancing end is a slide fastener member of the character described in Sundback patent No. 1,219,881, and which has means for automatically supplying such members to the feeding means.

(b) The claim numbered 38 in toto.

[*Official Gazette February 21, 1933.*]

DISCLAIMER

1,331,384.—*Gideon Sundback*, Meadville, Pa. SHEET-METAL FORMING AND SETTING MACHINE. Patent dated February 24, 1920. Disclaimer filed January 17, 1934, by the assignee, *Hookless Fastener Company*.

Hereby enters this disclaimer to that part of said specification which is in the following words, to wit:

"This invention relates to a machine for forming and setting metal punchings, and has particular reference to a special form of power press with automatic blank feeding means whereby punchings are formed from a strip blank and set on a carrying element." (p. 1, lines 10 to 16.)

"The present invention is not limited in its broad aspects to the production of the particular fastener members referred to, nor to the setting of such members on tapes, but is of general application wherever it is desired to automatically and cheaply form large numbers of like parts, and to set them on a suitable carrier element." (p. 1, lines 36 to 43.)

And your petitioner further disclaims from the scope of each of claims 1 to 33, inclusive, 35, 36, 37, and 39 to 44 inclusive, any combination except one for forming and affixing to a tape carrier, slide fastener members such as are described in the sentence beginning at line 21 of page 1 of the specification and reading as follows:

"The fastener members consist of separated jaws and an interlocking member having a recess on one side and a head on the other, these respective recesses and heads being arranged on a pair of tapes so as to alternately interlock."

[*Official Gazette February 6, 1934.*]

DEFENDANT'S EXHIBIT "F"

G. Sundback Patent No. 1,947,956

Filed Dec. 19, 1928

Patented Feb. 20, 1934

Feb. 20, 1934.

G SUNDBACK
FASTENER FORMING AND ASSEMBLING MACHINE AND METHOD
OF SECURING FASTENER ELEMENTS TO TAPE

1,947,956

Filed Dec. 19, 1928

8 Sheets-Sheet 1

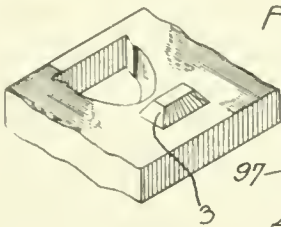
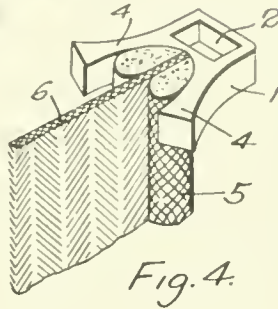
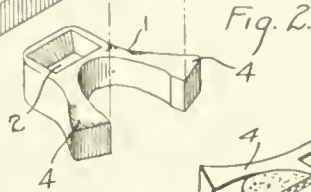
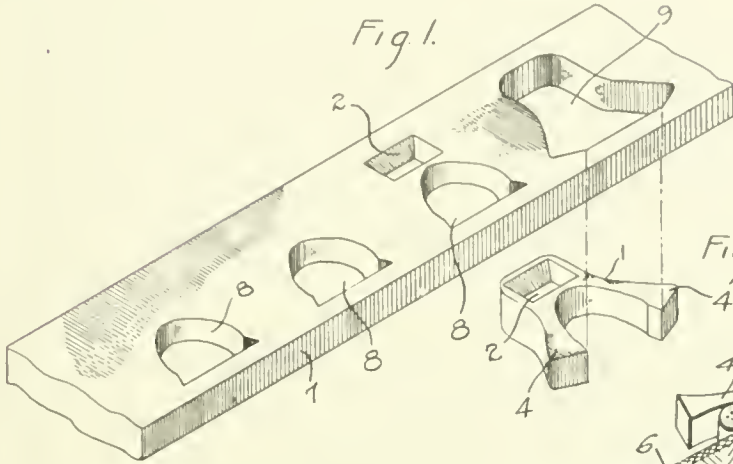
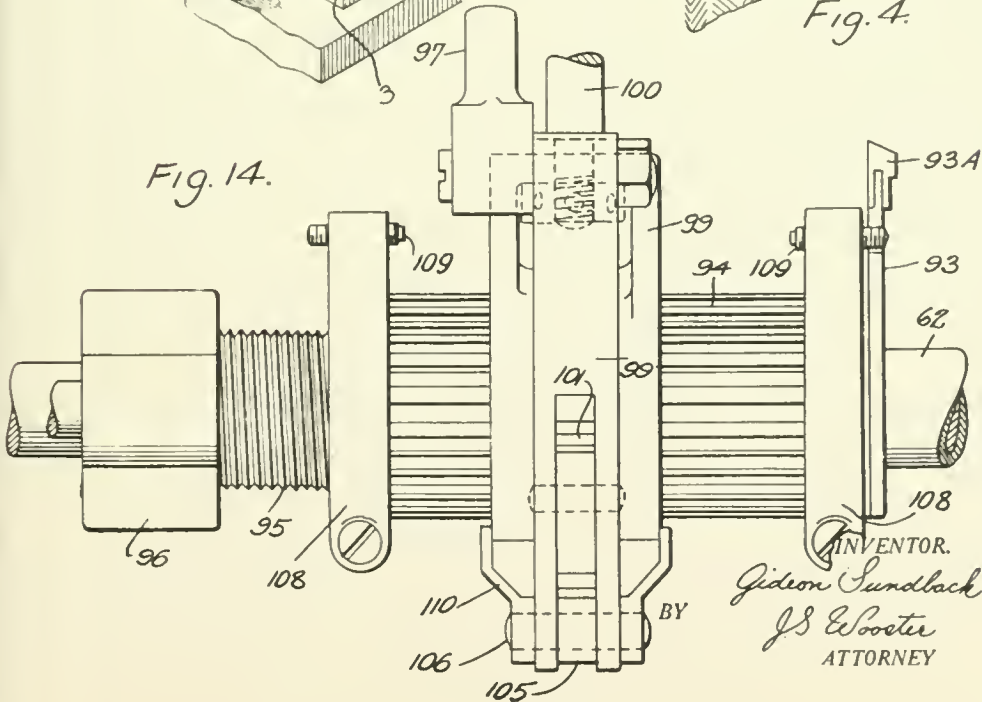
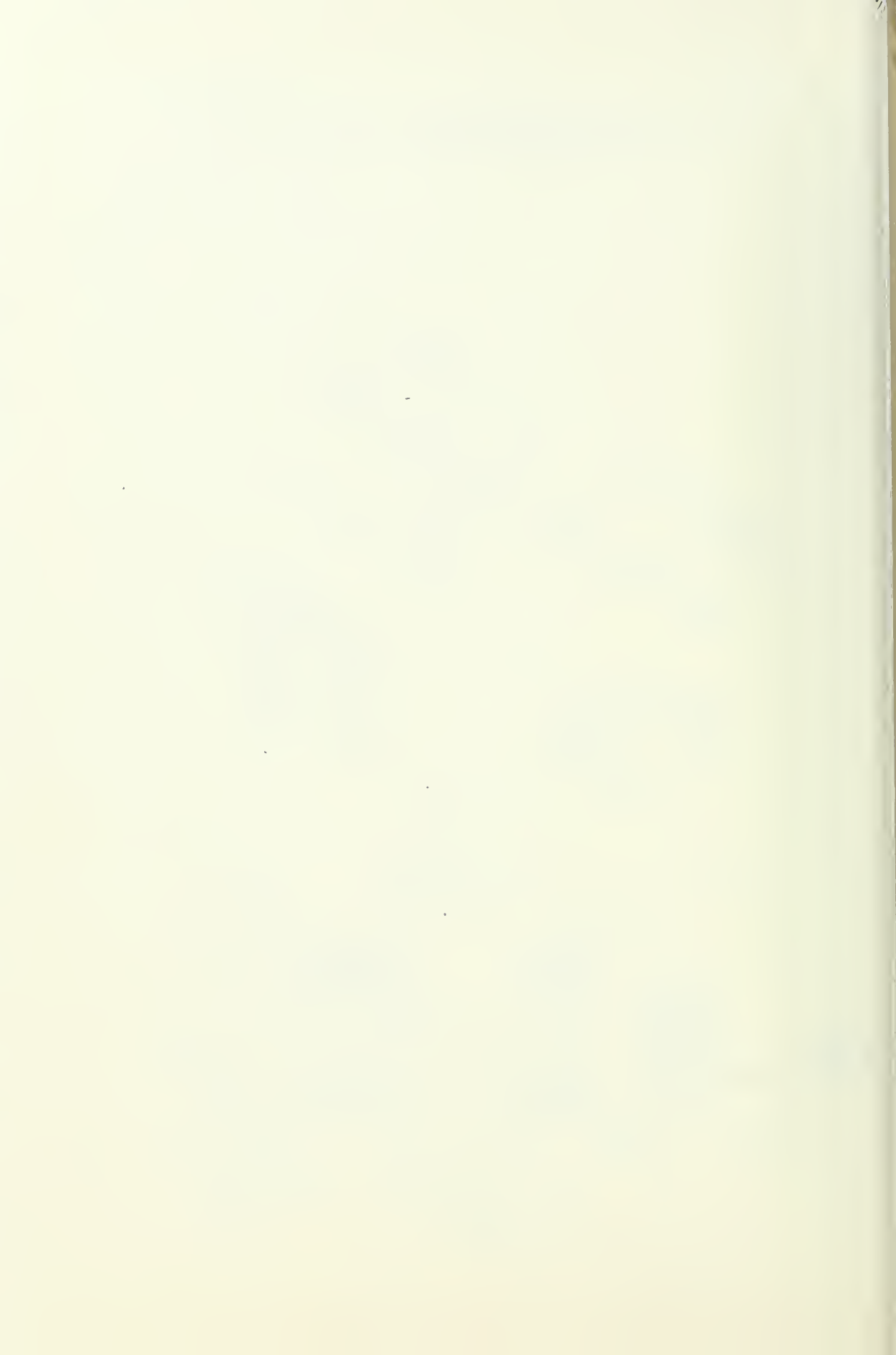


Fig. 14.



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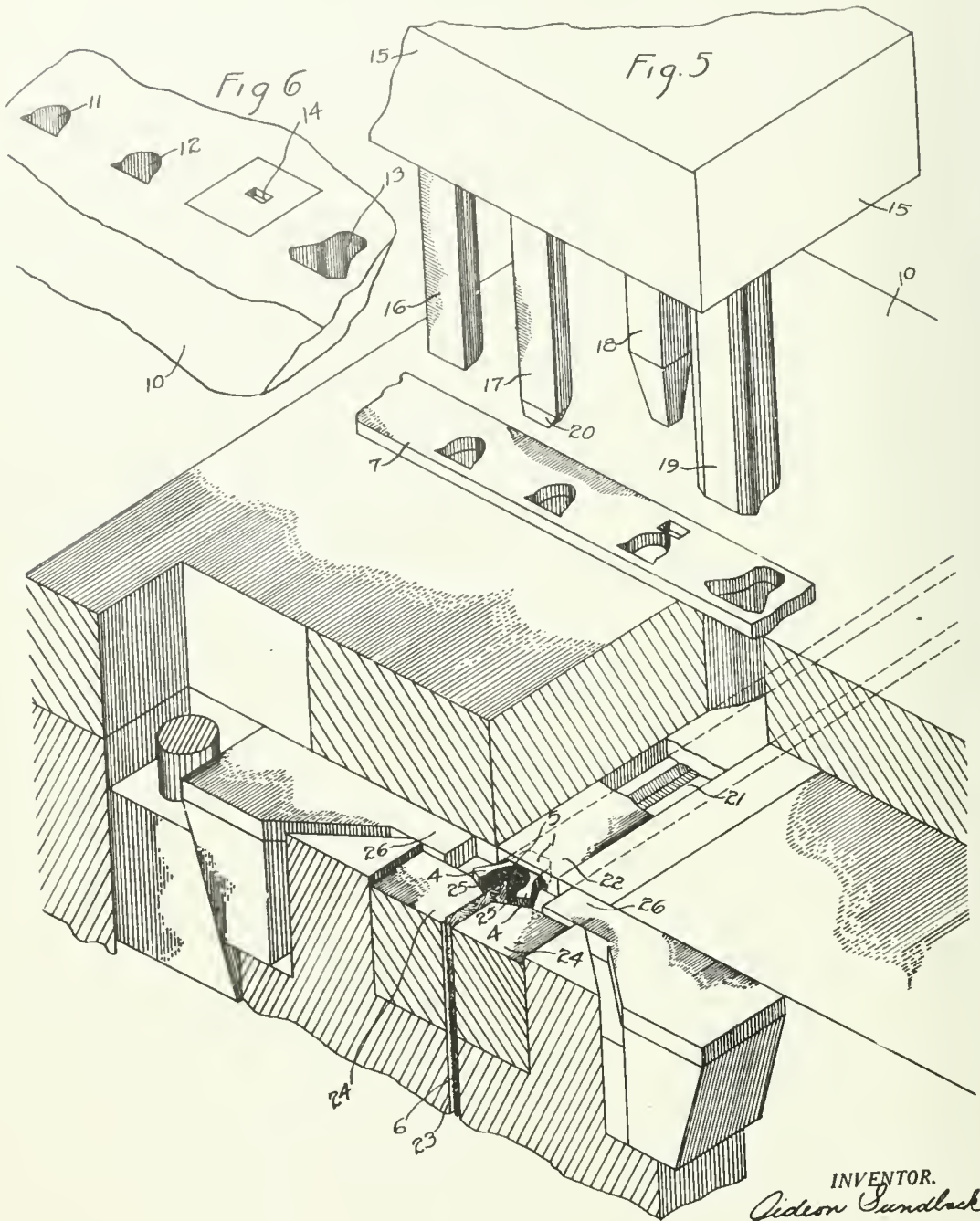
Feb. 20, 1934.

1,947,956

G. SUNDBACK
FASTENER FORMING AND ASSEMBLING MACHINE AND METHOD
OF SECURING FASTENER ELEMENTS TO TAPE

Filed Dec. 19, 1928

8 Sheets-Sheet 2



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FASTENER FORMING AND ASSEMBLING MACHINE AND METHOD
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Filed Dec. 19, 1928

1,947,956

8 Sheets—Sheet 3

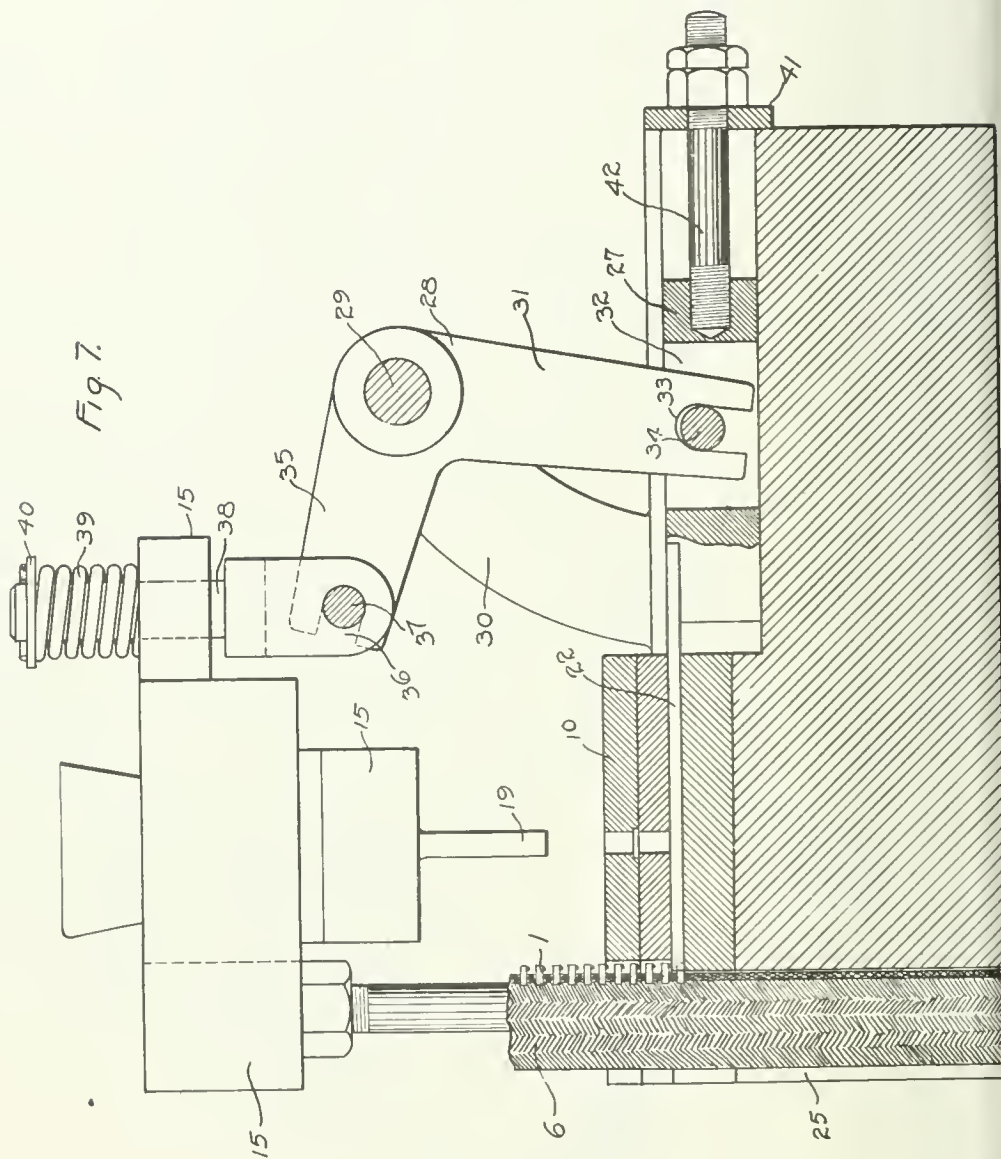


Fig. 7.

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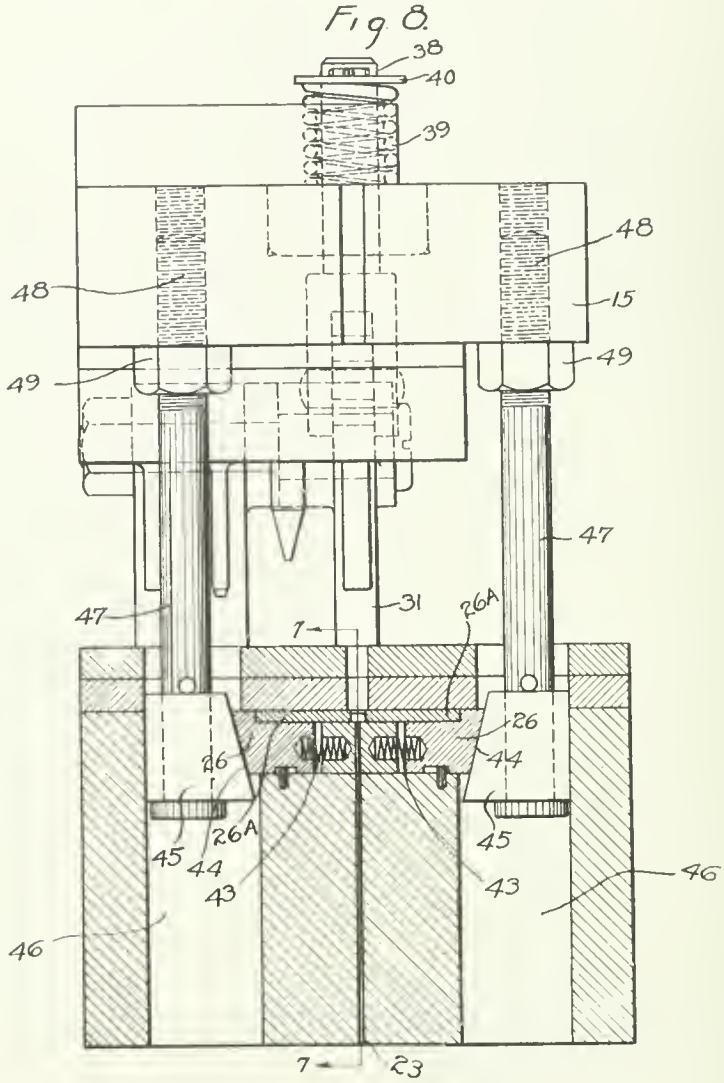
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G. SUNDBACK
FASTENER FORMING AND ASSEMBLING MACHINE AND METHOD
OF SECURING FASTENER ELEMENTS TO TAPE

1,947,956

Filed Dec. 19, 1928

8 Sheets-Sheet 4



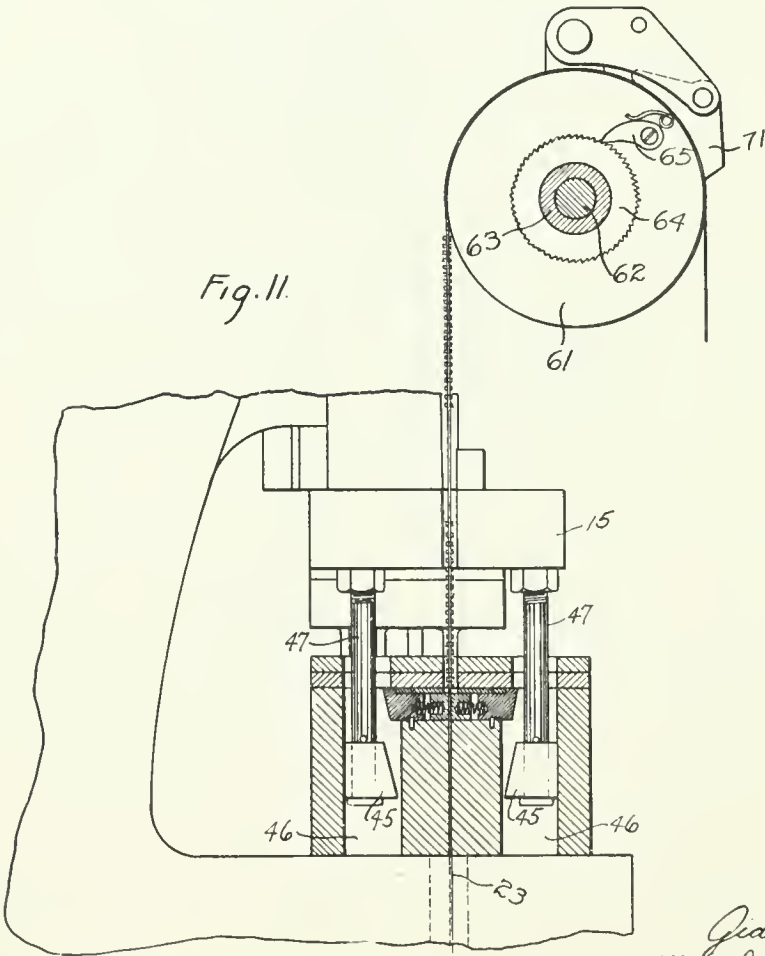
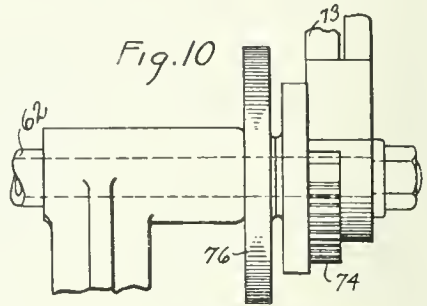
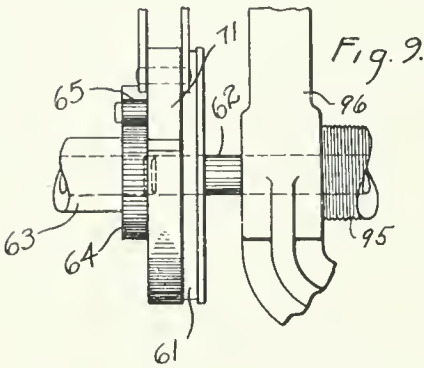
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OF SECURING FASTENER ELEMENTS TO TAPE
Filed Dec. 19, 1928

1,947,956

8 Sheets-Sheet 5



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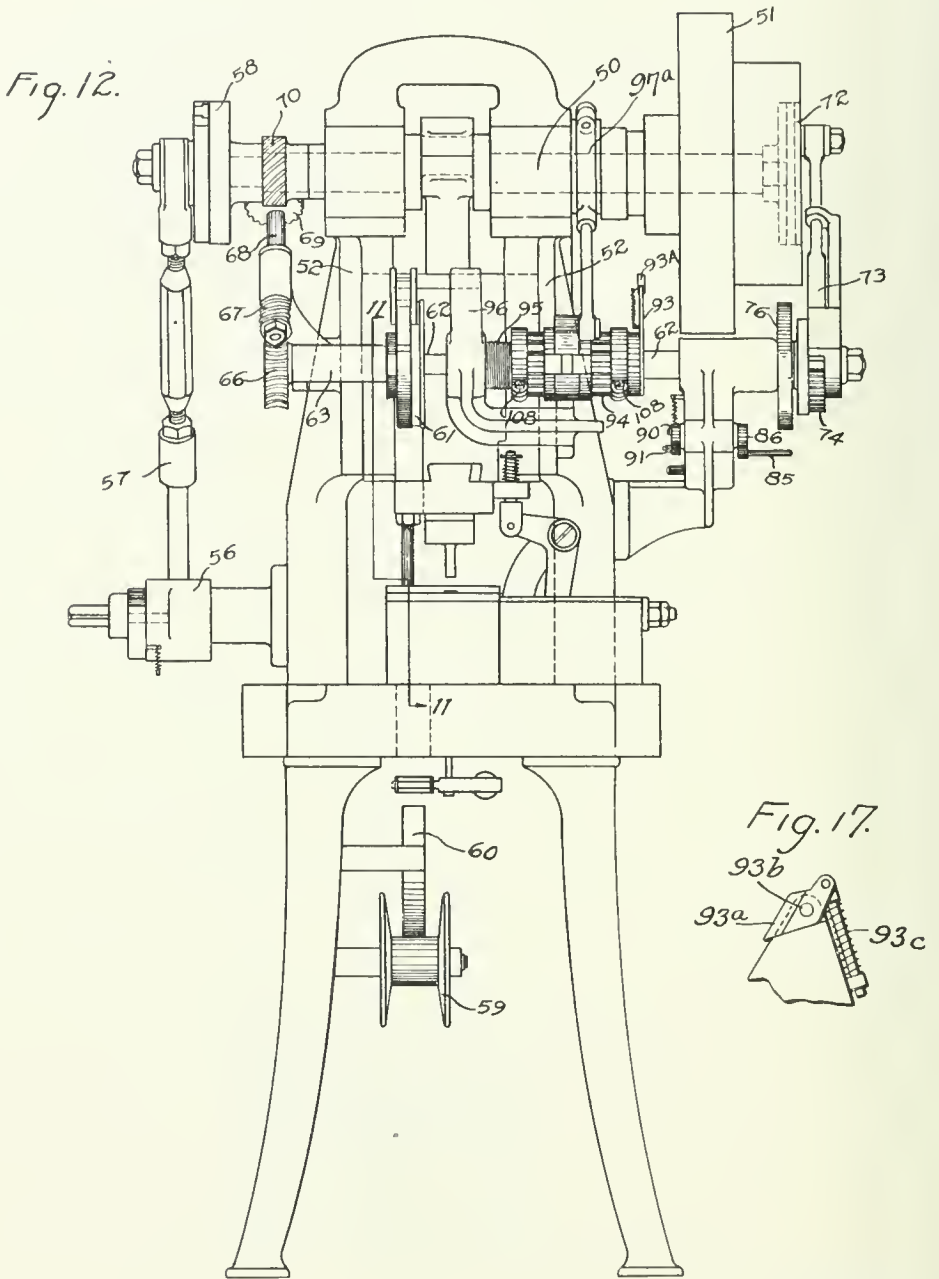
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G. SUNDBACK
FASTENER FORMING AND ASSEMBLING MACHINE AND METHOD
OF SECURING FASTENER ELEMENTS TO TAPE

1,947,956

Filed Dec. 19, 1928

8 Sheets—Sheet 6



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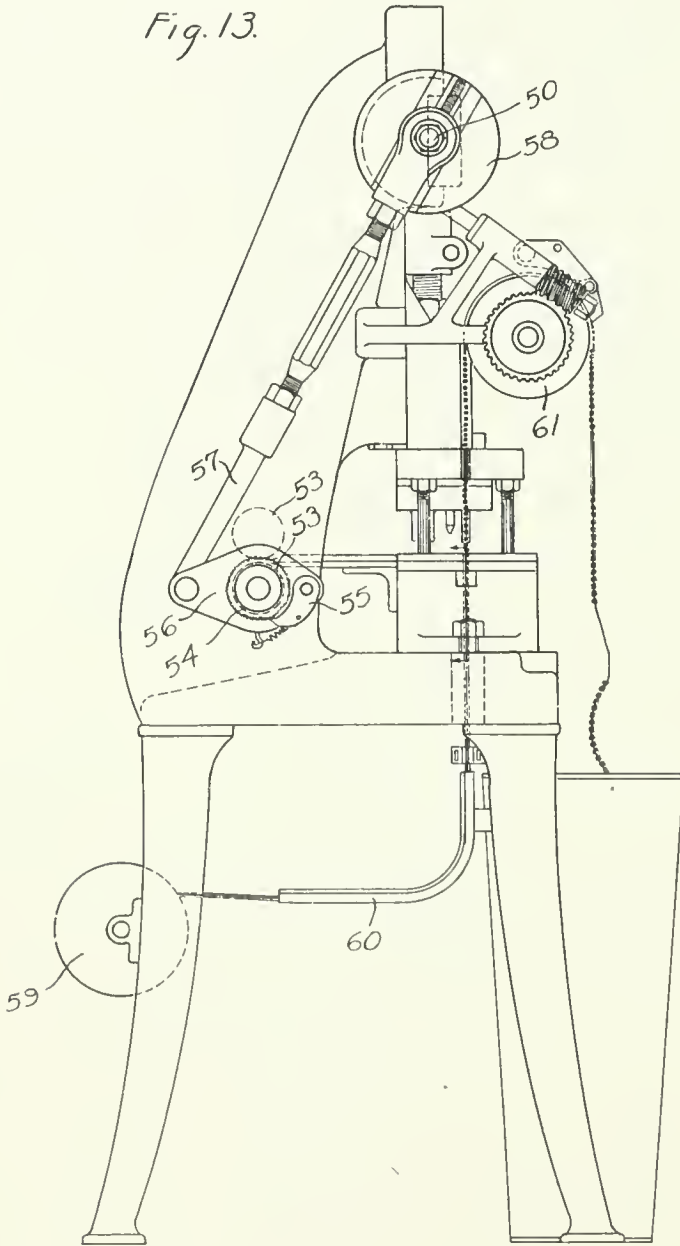
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G. SUNDBACK
FASTENER FORMING AND ASSEMBLING MACHINE AND METHOD
OF SECURING FASTENER ELEMENTS TO TAPE
Filed Dec. 19, 1928

1,947,956

8 Sheets-Sheet 7

Fig. 13.



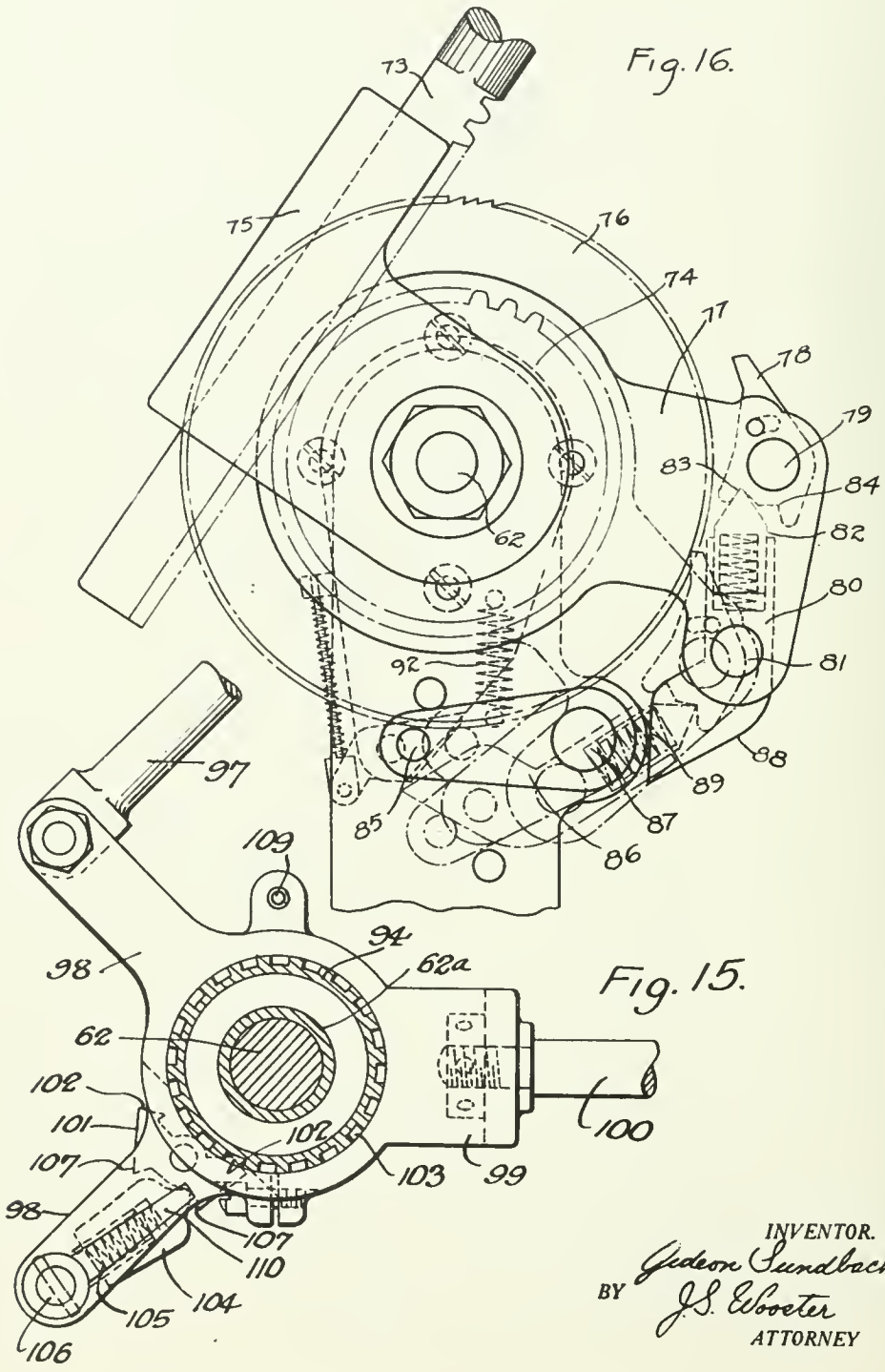
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FASTENER FORMING AND ASSEMBLING MACHINE AND METHOD
OF SECURING FASTENER ELEMENTS TO TAPE
Filed Dec. 19, 1928

1,947,956

8 Sheets-Sheet 8



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UNITED STATES PATENT OFFICE

1,947,956

FASTENER FORMING AND ASSEMBLING MACHINE AND METHOD OF SECURING FASTENER ELEMENTS TO TAPE

Gideon Sundback, Meadville, Pa., assignor to Hookless Fastener Company, Meadville, Pa., a corporation of Pennsylvania

Application December 19, 1928
Serial No. 327,060

27 Claims. (Cl. 153—1)

This invention relates to a fastener forming and assembling machine in which fastener elements are formed and attached to a holding strip such as a strip of corded tape and to a method of making fasteners. The present invention has for one of its objects to provide a forming and assembling machine of the character above referred to, which operates rapidly and efficiently.

Another object of the invention is to provide an improved method of making fasteners including several novel steps and novel combinations of steps.

A further object of the invention is to provide a machine in which the fastener elements are successively formed from metal stock and in which each fastener element is fastened to the holding strip immediately after it is formed.

A further object is to provide a machine in which the fastener elements are formed from metal stock in a reciprocating press and in which a fastener element is delivered from the press and fastened to the holding strip during each interval between forming strokes of the press.

A further object is to provide fastener positioning and attaching means which are directly operated from the reciprocating head of the press in proper timed relation with respect to the stroke of the press.

A further object is to provide means for delivering the fastener elements to the holding strip and for holding the strip and fastener elements in proper position with respect to each other while the fastener element is being clamped to the strip.

A further object is to provide fixed abutments on opposite sides of the strip at the point to which the fasteners are attached thereto against which the jaws of the fasteners are pressed to properly position the same with respect to the strip, together with means for compressing the jaws into clamping engagement with the strip.

A further object is to provide a reciprocating feeder for shifting the fastener element into engagement with the abutment, which is provided with the yielding actuating connections so that the fasteners will yieldably hold while their jaws are being compressed into clamping engagement with the strip.

A further object is to provide means in connection with the forming press to accurately position the metal stock with respect to the punches upon each stroke of the head.

With the above and other objects in view, the invention may be said to comprise the fastener forming and assembling machine and method as

illustrated in the accompanying drawings hereinafter described and particularly set forth in the appended claims, together with such variations and modifications thereof as will be apparent to one skilled in the art to which the invention appertains.

There are various novel steps in the method which will be described specifically and various novel combinations of steps that can be carried out by more than one machine or by a single machine of any suitable construction.

Reference should be had to the accompanying drawings forming a part of this specification in which:

Figure 1 is an isometric view of a flat metal blank showing the operations that take place in forming a fastener element.

Fig. 2 is an isometric view showing a fastener element which has been severed from the metal stock.

Fig. 3 is an isometric view showing the reverse side of the metal blank.

Fig. 4 is an isometric view showing a fastener element in the position in which it is clamped to the corded tape.

Fig. 5 is an isometric view showing the punch and die assembly, together with the plungers for transmitting the fasteners to strip engaging position and for clamping the fastener jaws on the corded edge of the tape.

Fig. 6 is an isometric view showing the opening in the die.

Fig. 7 is a vertical section taken on the line indicated at 7—7 in Fig. 8.

Fig. 8 is a sectional elevation showing the plungers for clamping the fasteners on the tape and the actuating means for these plungers.

Figs. 9 and 10 are detail views of the tape feed mechanism.

Fig. 11 is a vertical section taken on the line indicated at 11—11 in Fig. 12.

Fig. 12 is a front elevation of the machine.

Fig. 13 is a side elevation of the machine.

Fig. 14 is a detail view showing the mechanism for controlling the intermittent actuations of the feed drum.

Fig. 15 is a transverse section through the mechanism shown in Fig. 14.

Fig. 16 is a detail view showing the ratchet and pawl mechanism by means of which the drum is periodically actuated.

Fig. 17 is a detail view of a portion of the feed control mechanism.

The present invention is employed in the manufacture of separable fasteners of progressively

interlocking type which are employed to continuously interlock edge to edge flaps of flexible material.

The edges of the flaps have attached thereto at closely spaced points, jaw or fastener elements which are progressively interlocked or disengaged by means of a slider mounted for movement over the fastener elements of the two flaps. The fastener elements are ordinarily attached at regularly spaced points to holding strips which are secured along the edges of the flaps. The present invention in one of its aspects relates to a machine for forming the fastener elements and attaching them to a holding strip suitable for attachment to the flaps which are to be joined by the fastener.

The fastener element 1 shown in Figs. 2 and 4 is provided at one end thereof with a recess 2 in one face and with a corresponding projection 3 on the opposite face, the projection 3 being formed to fit in the recess 2 of an identical fastener element, as well understood in the art.

The fastener element is also formed with spaced compressible jaws 4 which are adapted to straddle a cord 5 secured along an edge of a fabric tape 6, as shown in Fig. 4, and to be compressed into clamping engagement with the cord 5 to permanently secure the fastener element to the tape. The fastener elements are formed from a flat strip 7 of metal stock by first punching in the stock an opening 8 which corresponds to the space between the clamping jaws 4, then compressing the stock between suitable dies to form the recess 2 and projection 3, adjacent one end of the opening 8. The complete fastener element is then punched from the stock, leaving a large opening 9 therein of the same size and shape as the fastener element.

The fastener forming operations are performed in a suitable press such as illustrated in Figs. 5 and 6, the press being provided with a suitable bed 10 which has die openings 11 and 12 of the same size and shape as the openings 8 to be formed in the metal stock. The bed 10 also has a die opening 13 of the same size and shape as the fastener element and of the same size as the opening 9, which is formed in the metal stock when the fastener is punched from the stock. Midway between the openings 12 and 13 of the bed, the bed has a die recess 14 in which the projection 3 of the fastener element is formed. The press has a suitable head 15 which is mounted for reciprocation toward and from the bed 10 and this head carries punches 16 and 17 which are aligned with the die openings 11 and 12 of the bed, and punch 18, which is aligned with the die recess 14 and which has a point which conforms to the recess 2 of the fastener element. The head 15 also has a punch 19 which is in alignment with and conforms to the die opening 13 of the bed. As shown in Fig. 5 a positioning punch 17 is located between the punches 16 and 18 and is somewhat longer than the others. This punch has a tapered end 20 and it will be readily seen that it will enter one of the openings formed by punch 16 and position the piece of stock so that the other tools will act on the metal at the proper place.

Extending transversely beneath the opening 13 of the bed, there is a guideway 21 of substantially the same width as the opening 13 to receive the fastener elements discharged by the punch 19 and in this guideway, there is mounted a reciprocating plunger 22 for advancing the fastener elements in the guideway. At the front of the

machine, the frame of the machine is provided with a slot 23 to receive the tape 6, which is supported in the slot 23 with its corded edge 5 toward the guideway 21, the slot 23 being positioned centrally of the guideway so that the jaws of the fastener elements may be advanced to a position in which they straddle the corded edge 5 of the tape.

In order to properly position the fastener element with respect to the tape, fixed abutments 24 are secured on opposite sides of the tape 6 at the end of the guideway 21 and these abutments have beveled edge portions 25 on the inner sides thereof with which the ends of the jaws 4 of the fastener elements engage.

For clamping the fastener elements on the tape, a pair of post plungers 26 are mounted on opposite sides of the tape for movement into and out of engagement with the jaws of the fastener element, straddling the tape and held against the abutments 24. The plungers 22 and 26 are operated in timed relation with respect to the movements of the head 15 of the press to move each fastener element as it is separated from the metal stock into engagement with the abutments 24 and to compress the jaws thereof into clamping engagement with the corded edge 5 of the tape to permanently secure the fastener element to the tape, the tape being continuously fed at a suitable rate to provide the desired spacing between the fastener elements.

As best shown in Fig. 7 of the drawings, the plunger 22 is attached to a suitable slide 27 mounted in the guideway at the rear of the bed 10 and this slide is directly actuated from the head 15 of the press through a bell crank lever 28 which is mounted to swing on a fixed pivot 29 carried by a bracket 30 fixed to the frame of the machine. The bell crank lever 28 has a downwardly extending arm 31, the lower end of which extends into a slot 32 in the slide 27 and has a forked end 33 straddling a pin 34 extending across the slot 32 of the slide. The other arm 35 of the bell crank lever extends forwardly of the pivot 29 and has a forked end 36 straddling a horizontal pin 37 carried by the lower end of a vertical post 38 which is slidably mounted in the head 15. The post 38 is yieldably supported on the head 15 by means of a coil spring 39 which is interposed between the upper face of the head and a washer 40 secured upon the upper end of the post 38.

It will be apparent that when the head 15 moves upwardly, the bell crank lever 28 is rocked in a direction to move the slide 27 toward the bed 10 and plunger 22 toward the tape 6, the movement of the slide 27 being such that the plunger 22 is moved from a position in which its forward end is at the rear of the opening 13 to a position in which a fastener element engages with abutments 24, the spring 39 providing a yielding connection so that at the forward end of the stroke of the plunger 22, the fastener element is yieldingly pressed against the abutments 24 so that the fastener element is positively held during the action of the plungers 26 to compress the jaws into clamping engagement with the tape. To limit the forward movement of the slide 27 and plunger 22 and prevent excessive pressure from being exerted on the fastener element, the slide 27 is preferably provided with a stock bar 41 secured thereto by means of a bolt 42 which engages with the frame of the machine to limit the forward movement of the slide.

As best shown in Fig. 8 of the drawings, the

compressing plungers 26 have fastener engaging portions 26a in the form of hardened plates which have a thickness substantially equal to the thickness of the fastener elements. These plungers are normally held clear of the guideway 21 to permit the fastener element to be moved to a position between them by means of compression springs 43 interposed between the plungers and the fixed abutments 24. The plungers 26 have inclined outer ends 44 which are engaged by wedge members 45 mounted for vertical movement in slots 46 provided in the frame and attached to the lower ends of the vertical rods 47 fixed to the head 15 of the press.

The rods 47 have upper ends 48 threaded into the head 15 and are held in adjusted position in respect to the head by means of lock nuts. During the up stroke of the head 15, the wedge members 45 acting on the inclined faces of the plungers 26 force the plungers inward against the jaw members 4 of a fastener element to compress the jaws into clamping engagement with the tape, the movement of the plungers 26 being so timed that they are brought into engagement with the fastener element immediately after the fastener element has been moved into engagement with the abutments 24 of the plunger 22.

As shown in Figs. 9 to 13, the reciprocating head 15 is suspended from and actuated by a crank shaft 50 which is continuously driven by suitable means such as through a belt pulley 51, the frame of the machine being provided with suitable vertical guides 52 for the head.

In order to feed the metal stock 7 intermittently and at the proper rate across the bed 10, feed rollers 53 are provided as shown in Fig. 13. One of these feed rollers is intermittently actuated through a ratchet 54 fixed to its shaft by means of a pawl 55 carried by a rocker arm pivoted upon the shaft of the feed roller. The pawl 56 is connected by an adjustable link 57 to an eccentric disc 58 with which the rod 57 has an adjustable connection so that the angular stroke of the rocker arm 56 may be varied to provide the desired feed for the strip 7 of the metal stock.

The fabric tape 6 is fed from a reel 59 through an angle guide 60 into a vertical guide slot 23. The movement is imparted to the tape by means of the drum 61 adjacent the top of the frame over which the tape passes. The drum 61 is fixed to the shaft 62 and is driven from a sleeve 63, which is rotatably mounted on the shaft 62, through a ratchet 64 fastened to the sleeve and a pawl carried by the drum and engaging the ratchet.

The sleeve 63 has fixed thereto a worm gear 68 which is driven by a worm 67 on a shaft 68 which has a helical gear 69 meshing with a helical gear 70 on the crank shaft 50. The drum 61 is thus driven at a rate so proportioned to the rate of operation of the punch carrying head to provide the proper spacing between successive fastener elements applied to the tape.

The mechanism which has just been described drives the feed drum at a continuous rate and it will be observed that for a very brief period of time the portion of tape at the clamping station will have to remain stationary until released by the side tools 26. The length of the tape between the clamping station and the feed drum is readily capable of sufficient stretching to allow the strip to be held stationary momentarily by the clamping jaws.

It is desirable, however, that means be provided for momentarily increasing the speed of movement of the tape at predetermined intervals to provide a relatively wide space between fastener elements so that the rows of fastener elements applied to the tape will be the required length for the particular fastener in which they are to be used.

It will be noted that the pawl 65 does not interfere with the rotation of the drum 61 at a rate faster than that of the sleeve 63 and ratchet 64 and in order to provide gaps at predetermined intervals between the fasteners on the tapes, means is provided for automatically advancing the drum 61 with respect to the ratchet 64 at predetermined intervals. The drum 61 is, however, engaged by a brake 71 which imposes a drag on the drum to prevent its over-running the ratchet except when positively actuated. The advancing movement of the drum 61 is accomplished by means of a trip controlled mechanism operated from the crank shaft which will now be described.

At one end of the crank shaft 50, there is a crank 72, see Fig. 12, to which is connected a rack 73 which meshes with a pinion 74 loose on the shaft 62, see also Fig. 16, the rack 73 being held in engagement with the pinion 74 by means of a guide member 75 pivoted on the shaft 62. Upon each rotation of the shaft 50, the pinion 74 is oscillated through a relatively large angle on the shaft 62 and means is provided in connection with the pinion 74 for actuating the shaft 62 at predetermined intervals. To this end, a ratchet 76 is fixed to the shaft 62 alongside the pinion 74, and fixed to the pinion 74 there is a projecting member 77 which carries a pawl 78 which is normally held out of engagement with the ratchet 76, but which may be moved at intervals into engagement with the ratchet to impart rotation to the shaft 62.

The pawl 78 is mounted on a pivot pin 79 and is held either in or out of its ratchet engaging position by means of a trip lever 80 which is mounted intermediate its ends on a pivot pin 81 carried by the pawl carrier 77 and which carries at one end a spring pressed plunger 82 which has a pointed end engageable with closely spaced V notches 83 and 84 in the pawl 78.

When the lower end of the lever 80 is swung outwardly, the plunger 82 engages in the inner notch 83 of the pawl 78 and holds the pawl out of engagement with the ratchet as shown in full lines in Fig. 16. When the lower end of the lever 80 is swung inwardly, the plunger 82 engages in the notch 84 and holds the pawl in engagement with the ratchet as shown in phantom lines in said figure. The trip lever is actuated at intervals by means of a movably mounted trip pin 85 which may be shifted to a position to actuate the trip lever 80 at the end of the clockwise stroke of the carrier 77 in a direction to shift the trip lever 80 to a position in which it holds the pawl 78 in engagement with the ratchet during the succeeding counterclockwise stroke to impart a movement to the feed drum in excess of its normal rate of rotation in order to provide a relatively wide space between fastening elements applied to the strip. The trip pin 85 is attached to an arm 86 fixed to a shaft 87 journaled in the frame and is movable about the axis of the shaft 87 into and out of tripping position with respect to the lever 80. The oscillation of arm 86 is limited by stop members as indicated in Fig. 16. The lower end of the lever 80 has oppositely in-

8C
85
9C
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clined faces 88 and 89, the former being engage-
able with the pin 85 in its tripping position to
shift the lower end of the lever inwardly to en-
gage the pawl 78 with the ratchet and the latter
engaging with the pin in the non-tripping posi-
tion thereof to return the pawl to inoperative
position. The shaft 87 is provided with a second
arm 90 having a laterally projecting pin 91 and
this arm has connected thereto a spring 92 which
acts to normally hold the shaft 87 at one limit
of its movement with the pin 85 in its non-trip-
ping position.

In order to cause the drum 61 to be advanced at
proper intervals to space the fasteners on the
strip, a trip arm 93 is caused to engage the pin
91 to swing the pin 85 and arm 86 to move the pin
85 to tripping position, the arm 93 being actuated
through suitable timing mechanism from the
shaft 50 so as to automatically speed up the feed
of the strip after a predetermined number of
fastening elements have been attached thereto.

As shown in Figs. 12 and 14, the arm 93 is
attached to one end of a drum 94 which is
mounted for rotative and endwise movement by
means of a suitable bearing 62a as shown in Fig.
15. The other end of the drum is supported on
the stationary screw 95 fixed to a bracket 96 car-
ried by the frame of the machine, it being under-
stood that the drum is threaded to cooperate with
the screw 95 whereby axial movement is imparted
to the drum when rotated. The arm 93 has at its
outer end a member 93a pivoted thereto at 93b as
shown in Fig. 17 which may rotate against the
tension of spring 93c in one direction so that the
trip arms 86 and 90 are actuated by the arm 93
in one direction only. Intermittent rotative
movement is imparted to the drum by means of a
connecting rod 97 which is eccentrically con-
nected to the shaft 50 at one end and at its op-
posite end to a bell crank 98 which is mounted
to oscillate about the drum between the two arms
of a bracket 99 which encircle the drum. This
bracket which is fixed to the frame of the ma-
chine by a bolt 100 maintains the bell crank in
proper position when the drum moves axially.
The bell crank 98 carries a double pawl 101 which
is pivoted at its center and has detents 102 at its
ends either of which is engageable in longitudinal
grooves 103 in the periphery of the drum, one of
the pawl detents serving to impart rotation to the
drum in one direction and the other in the op-
posite direction as best shown in Fig. 15. The
pawl is yieldingly held in either of its positions
by means of a spring pressed plunger 104 mounted
in an arm 105 fixed to a pivot pin 106 journaled
in the bell crank 90 so that it may be swung to
engage the plunger with either of two shoulders
107 at opposite ends of the pawl.

Means is provided for automatically shifting
the arm 105 to reverse the pawl 101 and thereby
reverse the direction of rotation of the drum and
this means consists of collars 108 secured upon
opposite end portions of the drum and having
stop pins 109 which engage with lateral arms 110
fixed to opposite ends of the pivot pin 106 to shift
the same. As the drum rotates and moves later-
ally on the screw 95, one or the other of the arms
110 comes into circumferential alinement with a
stop pin 109 and as the drum rotates, is engaged
by the pin which swings the arm 105 and reverses
the position of the pawl 101.

The drum is thus alternately rotated in one
direction and then the other and reciprocated
axially. At one end of the axial reciprocation of
the drum, the pin 91 is engaged by the arm 93

shifting the trip pin 85 into the path of the tri-
pping lever 80 so that at one end of its stroke, the pawl
78 is shifted into engagement with the ratchet
to impart a relatively rapid movement to the
feed drum 61. The rotative movement of the
drum 94 is relatively slow with respect to the ra-
te of movement of the oscillating pawl carrier
so that the pin 85 will be held in tripping position
by the arm 93 a sufficient length of time to tri-
pp the pawl 78 but during the time in which the
carrier 77 is making a complete oscillation, the
arm 93 will have been moved to a position releas-
ing the pin 91 so that the trip pin 85 will be re-
turned by the spring 92 to its normal position
where it is engaged by the inclined face 89 of the
trip lever and shifts the trip lever to the position
in which it holds the pawl 78 out of ratchet en-
gagement position.

Thus, upon a predetermined number of revolu-
tions of the operating shaft 50, the feed drum
is automatically advanced to provide a gap between
the fastening elements applied to the strip so
that there will be a predetermined number of
fasteners closely and equally spaced along the
strip and then a gap where the strip may be
severed.

In order to vary the number of fasteners in
a group, the collars 108 may be adjusted longi-
tudinally of the drum 94 to increase or decrease
the extent of axial movement of the drum and
the number of rotations of the operating shaft
between successive overrunning movements of
the feed drum.

The machine of the present invention is adapted
to operate efficiently at a very high rate of
speed by reason of the fact that each fastener
element is transferred to the tape and fixed
thereto before another fastener element is sep-
arated from the metal stock. Furthermore, the
fastener feed plunger and the clamping plunger
are operated by very simple mechanical connec-
tions directly from the reciprocating head of the
press so that the assembling and clamping opera-
tions are performed very rapidly and in exact
timed relation to the movements of the head.
In addition, the punching operations on the
metal stock are kept very accurate by the posi-
tioning punch 17 which accurately aligns the
metal stock with respect to the punches and di-
openings upon each stroke of the press.

Furthermore, it is to be understood that the
particular form of apparatus shown and de-
scribed, and the particular procedure set forth
are presented for purposes of explanation and
illustration and that various modifications of said
apparatus and procedure can be made without
departing from my invention as defined in the
appended claims.

What I claim is:

1. A machine for forming fastener element
and attaching the same to a strip and compris-
ing a bed, a reciprocating head moving toward
and from the bed, means for intermittently feed-
ing metal stock across the bed beneath the head,
cooperating means carried by the bed and head
for forming fastener elements from said metal
stock and separating the formed fastener ele-
ments one at a time from the stock, means for
supporting and feeding the strip, and means
actuated by said head for moving each fastener
element as it is separated from the stock into
engagement with the strip and for fastening the
same to the strip.

2. A machine for forming fastener element
and attaching the same to a strip and compris-

3. A machine for forming fastener elements and attaching them to a strip and comprising a bed, a reciprocating head moving toward and from the bed, means for intermittently feeding metal stock across the bed beneath the head, a guideway beneath the bed, means carried by the head and bed for forming from said stock fastener elements having spaced compressible jaws and for delivering a fastener element to the guideway upon each down stroke of the head, means for supporting and feeding a strip across an end of the guideway, means operatively connected to the head for moving the fastener element into engagement with said strip, and means operated by said head for attaching the fastener elements to said strip.

4. A machine for forming fastener elements and attaching them to a strip and comprising a bed, a reciprocating head moving toward and from the bed, means for intermittently feeding metal stock across the bed beneath the head, a guideway beneath the bed, means carried by the head and bed for forming from said stock fastener elements having spaced compressible jaws and for delivering a fastener element to the guideway upon each down stroke of the head, means for supporting and feeding a strip across an end of the guideway, and means operatively connected to the head for moving the fastener element into engagement with said strip, and means operated by said head for attaching the fastener element to the strip.

5. A machine for forming fastener elements and attaching them to a strip and comprising a bed, a reciprocating head moving toward and from the bed, means for intermittently feeding metal stock across the bed beneath the head, a guideway beneath the bed, means carried by the head and bed for forming from said stock fastener elements having spaced compressible jaws and for delivering a fastener element to the guideway upon each down stroke of the head, means for supporting and feeding a strip across an end of the guideway, a plunger in said guideway and operatively connected to the head for pushing each fastener element into engagement with the strip with the jaws straddling the strip, and opposed plungers operatively connected to the head for pressing the jaws into clamping engagement with the strip.

6. A machine for forming fastener elements and attaching them to a strip and comprising a bed, a vertically reciprocating head co-operating with the bed, means for intermittently feeding metal stock across the bed beneath the head, a guideway beneath the bed, means carried by the head and bed for forming from said stock fastener elements having spaced compressible jaws and for delivering a fastener element to the guideway upon each down stroke of the head, means for supporting and feeding a strip across an end of the guideway, means operatively connected to the head for moving a fastener element along the guideway into engagement with said strip upon each up stroke of the head, and means operated by the head for attaching the fastener elements to the strip.

7. A machine for forming fastener elements and attaching them to a strip and comprising a bed, a vertically reciprocating head co-operating with the bed, means for intermittently feeding metal stock across the bed beneath the head, a guideway beneath the bed, means carried by the head and bed for forming from said stock fastener elements having spaced compressible jaws and for delivering a fastener element to the guideway upon each down stroke of the head, means for supporting and feeding a corded tape across an end of the guideway, opposed plungers on opposite sides of the tape, a plunger in said guideway for moving each fastener into a position between the

opposed plungers with its jaws straddling the tape, and means for operating said opposed plungers during the intervals between successive down strokes of the head to engage the fasteners with the tape and clamp the same thereon.

8. A machine for forming fastener elements and attaching them to a strip comprising a bed, a vertically reciprocating head co-operating with the bed, means for intermittently feeding metal stock across the bed beneath the head, a guideway beneath the bed, means carried by the head and bed for forming from said stock fastener elements having spaced compressible jaws and for delivering a fastener element to the guideway upon each down stroke of the head, means for supporting and feeding a corded tape across an end of the guideway, opposed plungers on opposite sides of the tape, a plunger in said guideway for moving each fastener into a position between the opposed plungers with the jaws straddling the tape, and means operatively connected with the head for actuating said plungers during each up stroke of the head to engage a fastener with the tape and clamp the same thereon.

9. A machine for forming fastener elements and attaching them to a strip, comprising a bed, a vertically reciprocating head co-operating with the bed, means for intermittently feeding metal stock across the bed beneath the head, a guideway beneath the bed, means carried by the head and bed for forming from said stock fastener elements having spaced compressible jaws and for delivering a fastener element to the guideway upon each down stroke of the head, means for supporting and feeding a corded tape across an end of the guideway, opposed plungers on opposite sides of the tape, a plunger in said guideway for moving each fastener into a position between the opposed plungers with its jaws straddling the tape, means operatively connected to the head for operating the guideway plunger during the upstroke of the head, and separate means for operating said opposed plungers to compress the jaws of the fastener elements into clamping engagement with the tape.

10. A machine for forming fastener elements and attaching the same to a strip, comprising a bed, a vertically reciprocating head co-operating with the bed, a guideway beneath the bed, means for supporting and feeding a strip vertically across an end of the guideway and edgewise with respect thereto, means for intermittently feeding metal stock across the bed beneath the head, means carried by the head and bed for forming from said stock fastener elements having spaced compressible jaws and for delivering a fastener element to said guideway upon each down stroke of the head, a plunger in said guideway, opposed plungers on opposite sides of the strip, springs normally holding the latter plungers away from the strip, means operatively connecting the guideway plunger with the head for moving the same toward the strip during the up stroke of the head to shift a fastener element into a position in which its jaws straddle the strip, and wedge members movable with the head and acting upon the opposed plungers to simultaneously move them into engagement with the fastener jaws to compress the same into clamping engagement with the strip.

11. A machine for forming fastener elements and attaching the same to a strip, comprising a bed, a vertically reciprocating head co-operating with the bed, a guideway beneath the bed, means for supporting and feeding a strip vertically across

an end of the guideway and edgewise with respect thereto, means for intermittently feeding metal stock across the bed beneath the head punches carried by the head and bed for punching from said stock fastener elements having spaced compressible jaws and for delivering a fastener element to said guideway upon each down stroke of the head, a plunger in said guideway, opposite plungers on opposite sides of the strip, springs normally holding the latter plungers away from the strip, a bell crank lever mounted on a fixed pivot and having one arm yieldingly connected to the head and its other arm connected to the guideway plunger, and means operatively connecting the head with the opposed plungers for operating the same in opposition to their springs to compress the jaws into clamping engagement with the strip.

11. A machine for forming fastener elements and attaching the same to a strip, comprising a bed, a vertically reciprocating head co-operating with the bed, a guideway beneath the bed, means for supporting and feeding a strip vertically across an end of the guideway and edgewise with respect thereto, means for intermittently feeding metal stock across the bed beneath the head, means carried by the head and bed for forming from said stock fastener elements having spaced compressible jaws and for delivering a fastener element to said guideway upon each down stroke of the head, a plunger in said guideway, opposed plungers on opposite sides of the strip, springs normally holding the latter plungers away from the strip, a bell crank lever mounted on a fixed pivot and having one arm yieldingly connected to the head and its other arm connected to the guideway plunger, and wedge members movable with the head and acting on said opposed plungers to move the same toward the strip to compress the jaws into clamping engagement therewith.

12. In a machine of the character described, a guideway, means for supporting and feeding a strip across the guideway centrally thereof with the strip disposed edgewise to the guideway, fixed abutments at the end of the guideway on opposite sides of the strip, means for delivering to the guideway at predetermined intervals fastener elements having spaced compressible jaws presented toward the strip, means associated with the guideway for advancing each fastener element to a position in which its jaws straddle the strip and engage said abutments and for yieldingly holding the fastener element against said abutments, and means for compressing said jaws into clamping engagement with the strip while the fastener element is so held.

13. In a machine of the character described, a guideway, means for supporting and feeding a strip across the guideway centrally thereof with the strip disposed edgewise to the guideway, fixed abutments at the end of the guideway on opposite sides of the strip, means for delivering to the guideway at predetermined intervals fastener elements having spaced compressible jaws presented toward the strip, a plunger in the guideway for advancing the fasteners to strip engaging position, a reciprocating actuator having a yielding connection with said plunger whereby the fastener element is yieldingly held between said plunger and said abutments at the end of the stroke of the plunger, and means for compressing said jaws into clamping engagement with the strip while the fastener element is yieldingly held against said abutments.

14. In a machine for affixing fastener elements to a strip, means for feeding the strip including a feed drum, a ratchet through which the drum is driven, a rotatable member having a pawl engaging said ratchet, means for continuously rotating said member, means independent of the pawl and ratchet for turning the drum in the direction in which it is turned by the pawl and ratchet, but at a higher speed, and means for intermittently actuating the last mentioned means, said actuating means being adjustable for varying the intervals between actuations thereof.

15. In a machine for affixing fastener elements to a strip, a drive shaft, fastener forming and affixing means operated by said shaft, means for feeding a strip past the affixing means including a feed drum, means including a pawl and ratchet for driving said drum at a uniform speed from said shaft, a second ratchet rotatable with said drum, a pawl mounted to swing about the axis of said second ratchet and engageable therewith, means operated by said drive shaft for oscillating the last mentioned pawl, means for normally holding said pawl out of engagement with said second ratchet, and means operated by said shaft for periodically engaging said pawl with said ratchet.

16. In a machine for affixing fastener elements to a strip, a drive shaft, fastener forming and affixing means operated by said shaft, means for feeding a strip past the affixing means including a feed drum, means including a pawl and ratchet for driving said drum at a uniform speed from said shaft, a second ratchet rotatable with said drum, a pawl mounted to swing about the axis of said second ratchet and engageable therewith, means operated by said drive shaft for oscillating the last mentioned pawl, means for normally holding said pawl out of engagement with said second ratchet, and means operated by said shaft for periodically engaging said pawl with said ratchet, said last mentioned means being adjustable to vary the intervals between actuations of said second ratchet by said pawl.

17. In a machine for affixing fastener elements to a strip, a drive shaft, fastener forming and affixing means operated by said shaft, means for feeding a strip past the affixing means including a feed drum, means including a pawl and ratchet for driving said drum at a uniform speed from said shaft, a second ratchet rotatable with said drum, a pawl mounted to swing about the axis of said second ratchet and engageable therewith, means operated by said drive shaft for oscillating the last mentioned pawl, means for normally holding said pawl out of engagement with said second ratchet, a fixed threaded member, a rotatable member in threaded engagement therewith, means operated by said shaft for rotating the latter member to advance the same on said first threaded member, means operable at predetermined intervals for reversing the direction of movement of the rotatable member, and means carried by the rotatable member for periodically engaging said pawl with said second ratchet.

18. In a machine of the character described, a drive shaft, a feed drum, a ratchet having a driving connection with said drum, a rotatable member mounted coaxially with said ratchet, a pawl carried by said rotatable member and engaging said ratchet, a driving connection between said drive shaft and rotatable member for continuously rotating the latter, and means periodi-

cally operated by said drive shaft for imparting to the drum a rotative movement at a speed in excess of that of said rotatable member, said last mentioned means being adjustable to vary the intervals between actuations of the drum thereby.

19. In a machine of the character described, a drive shaft, a feed drum, a ratchet having a driving connection with said drum, a rotatable member mounted coaxially with said ratchet, a pawl carried by said rotatable member and engaging said ratchet, a driving connection between said drive shaft and rotatable member for continuously rotating the latter, a second ratchet having a driving connection with said drum, a member mounted to swing about the axis of said second ratchet, means operated by said drive shaft for oscillating the latter member, a pawl carried by said member and engageable with said ratchet, means for normally holding the latter pawl out of engagement with the ratchet, and means operated by said drive shaft for periodically engaging said pawl with its ratchet.

20. In a machine of the character described, a drive shaft, a feed drum, a ratchet having a driving connection with said drum, a rotatable member mounted coaxially with said ratchet, a pawl carried by said rotatable member and engaging said ratchet, a driving connection between said drive shaft and rotatable member for continuously rotating the latter, a second ratchet having a driving connection with said drum, a member mounted to swing about the axis of said second ratchet, means operated by said drive shaft for oscillating the latter member, a pawl carried by said member and engageable with said ratchet, means for normally holding the latter pawl out of engagement with the ratchet, and means operated by said drive shaft for periodically engaging said pawl with its ratchet said last mentioned means being adjustable to vary the time intervals between actuations of the drum by the second pawl and ratchet.

21. The method of forming fastener elements of the type having spaced clamping jaws at one end and an interlocking projection and recess at the other end, including feeding a flat piece of metal, forming said projection and recess, cutting out portions to provide spaces between the clamping jaws of each element and afterwards severing the elements from the strip, said cutting out and severing being performed in separate operations.

22. The method of making a fastener stringer of the type having a flexible strip and fastener elements attached to said strip by clamping jaws at one end comprising forming interlocking projections and recesses in a flat strip of material, punching out material adjacent said recesses to provide spaces between the clamping jaws of the fastener elements when separated from the strip, severing the elements from the strip in a succeeding operation and attaching said fastener elements to the flexible strips at spaced intervals.

23. The method of forming fastener elements each having a recess and projection at one end

and separated clamping jaws at the other end and attaching such elements to a strip comprising forming recesses and projections in said strip at spaced intervals, successively positioning said recesses and projections under a blanking punch and blanking out elements each of which includes a recess and projection, transferring said elements, one at a time, to a carrier strip, and pressing the jaws of said element together to clamp the same around the edge of said strip.

24. The method of forming fastener elements each having a recess and projection at one end and separated clamping jaws at the other end and attaching such elements to a stringer comprising feeding a flat strip of material, forming aligned recesses and projections in said strip of material, positioning said recesses and projections in turn under a blanking punch and successively blanking out elements from said strip each of which includes a recess and projection and jaws extending cross-wise of the strip, transferring said elements, one at a time, into attaching position with the clamping jaws astride a carrier strip and bending said jaws together to clamp the elements to said strip.

25. The method of making a fastener stringer of the type having a flexible strip and fastener elements attached in spaced relation to the edge of said strip comprising feeding a strip of metal, forming interlocking projections and recesses therein and punching out elements therefrom, each of which includes a projection and recess and shaped to provide separated clamping jaws at one end, feeding a fabric strip wholly out of the line of said metal feed, transferring the elements as punched from the metal strip to the fabric strip and positioning the same thereon with the jaw end astride the edge of the strip and clamping said jaws to the strip.

26. A machine for securing fastener elements to a supporting tape comprising continuously operable feeding means for feeding the tape under tension, fastener element clamping mechanism spaced from the feeding means for clamping the fastener elements to the tape, said element clamping mechanism being stationary whereby movement of the tape at the clamping station is temporarily arrested by the fastener element being clamped without arresting operation of said feeding means.

27. In a machine for affixing fastener elements to a strip, continuously operable feeding means for feeding the strip under tension continuously including a feed drum, means for normally driving said drum at a continuous uniform speed, means for periodically increasing the speed of rotation of the drum to provide gaps between groups of fastener elements on the tape, and means for intermittently feeding fastener elements to a position astride the edge of said strip and clamping them in position thereon.

GIDEON SUNDBACK.

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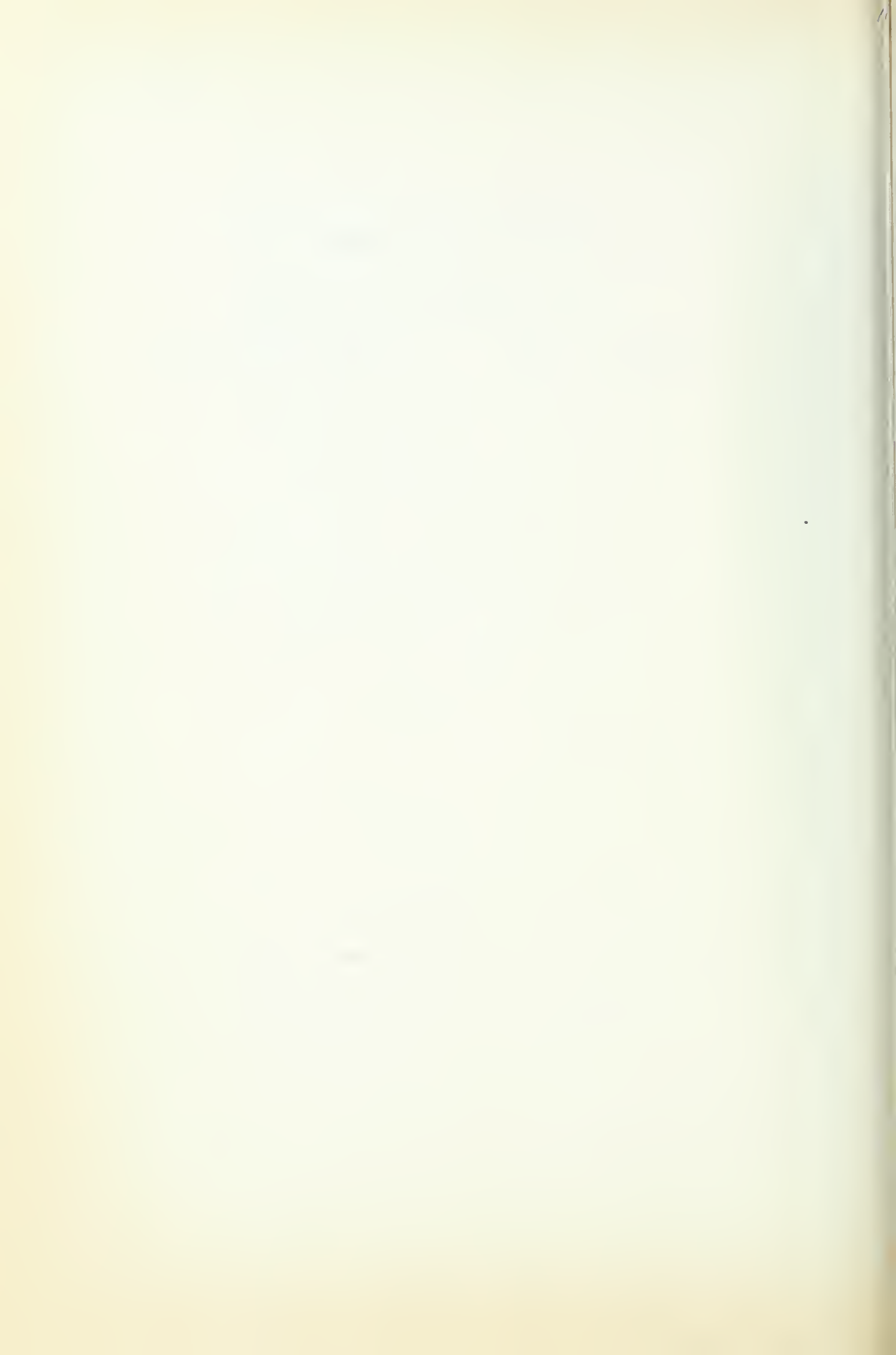
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DEFENDANT'S EXHIBIT "G"

L. W. Smith Patent No. 1,533,352

Filed Aug. 3, 1920

Patented April 14, 1925



April 14, 1925.

1,533,352

L. W. SMITH

METHOD OF MAKING PAPER BOX FASTENERS

Filed Aug. 3, 1920

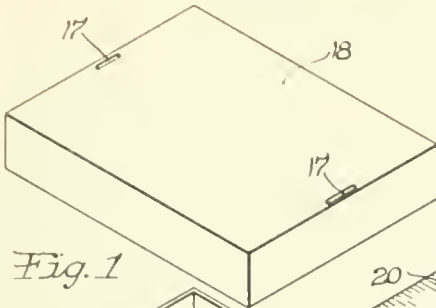


Fig. 1

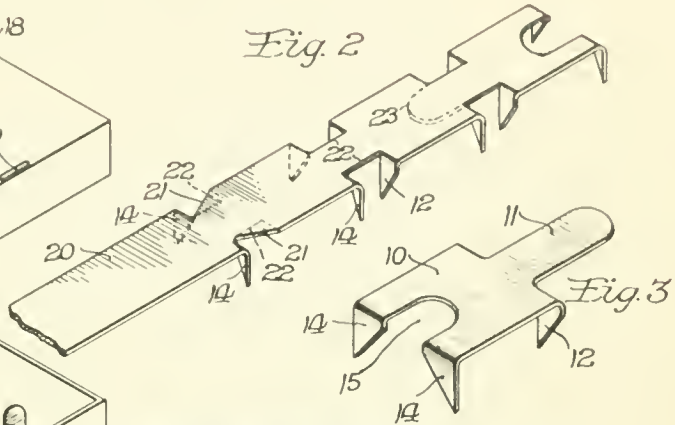
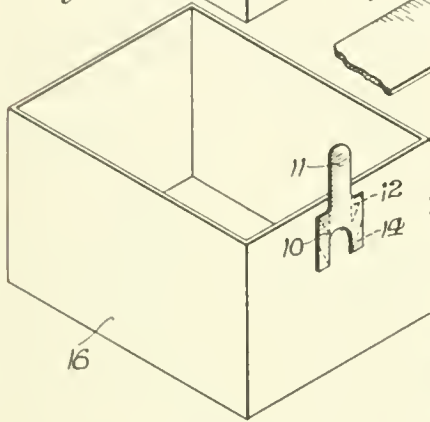


Fig. 2

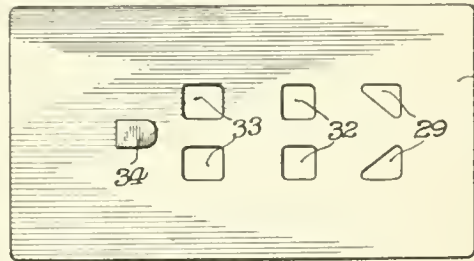


Fig. 6

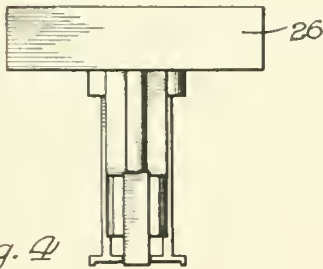


Fig. 4

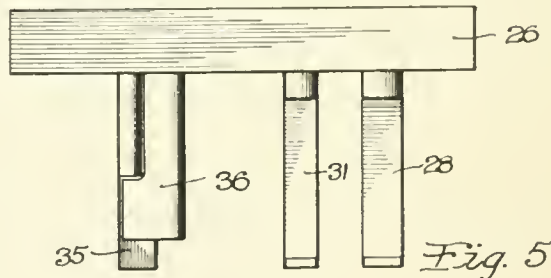
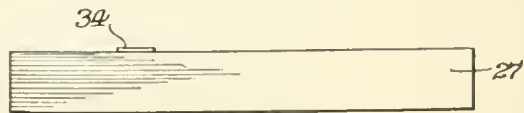
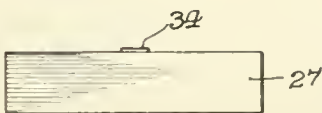


Fig. 5



Inventor
L. W. Smith
By Brown, Boettcher & Diemer
Attorneys

UNITED STATES PATENT OFFICE.

LOU W. SMITH, OF CHICAGO, ILLINOIS.

METHOD OF MAKING PAPER-BOX FASTENERS.

Application filed August 3, 1920. Serial No. 401,036.

To all whom it may concern:

Be it known that I, LOU W. SMITH, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Methods of Making Paper-Box Fasteners, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings forming a part of this specification.

My invention relates to an improved method of making paper box fasteners and the like.

The primary object of my invention is to provide an improved method of manufacturing a simple and inexpensive form of box fastener which will have maximum security of engagement with the wall of the paper box; this being accomplished by devising the body portion thereof to have a comparatively large area of clenched engagement with the wall of the box by the provision of a plurality of clenching prongs on the body portion at points so distributed as to sustain the lateral and outward strains to which the fastener is subjected, without danger of tearing from the box.

This improved method is designed to punch out these fasteners with maximum rapidity and with perfect economy of material, this latter result being attained by punching the fasteners out of the stock material in such a manner as to utilize every bit of stock and avoid the creation of any waste scrap.

In the accompanying drawings in which a preferred embodiment of my invention is particularly illustrated:

Figure 1 is a perspective view of a paper box illustrating the application of one of my improved fasteners;

Fig. 2 is a perspective view of the stock material illustrating in progressive sequence the various punching operations performed thereon;

Fig. 3 is an enlarged perspective view of the completed fastener;

Fig. 4 is a simplified end view of the punching dies for performing the punching operations;

Fig. 5 is a side view of the same; and

Fig. 6 is a plan view of the die plate.

Referring to the perspective illustration in Fig. 1, my improved box fastener com-

prises a body portion 10 and an extending tongue 11. The tongue 11 is made considerably narrower than the body portion 10, forming an upper edge on the body portion from which are bent down two prongs or spurs 12—12. These prongs are of triangular formation, being struck down from the metal along the lateral edges of the tongue 11 in such a manner as to form vertical inner edges on the prongs and inclined outer edges which converge inwardly and form points on the prongs. The lower end of the fastener is similarly formed with two triangular prongs 14—14. The outer edges of these prongs 14 extend vertically, or at a right angle to the body of the fastener, while the inner edges extend diagonally thereto to form the points. It will be noticed that the lower edge of the body portion 10 is formed with an upwardly extending recess 15. As I shall hereinafter describe in connection with the punching operation, this recess results from punching the tongue end of the preceding fastener out of the body portion of the next adjacent fastener. This practice does not impair the strength of the body portion 10 or prongs 14 to any extent, and has the advantage of saving a considerable quantity of metal.

Fig. 1 illustrates a typical application of my improved type of fastener to a paper box. The fasteners are secured to the end walls of the box 16 by forcing the prongs 12 and 14 through the wall of the box from the outside and clenching over the inner projecting ends on the inside of the box. The provision of the four prongs 12—12 and 14—14 at the four corners of the fastener insures a distributed area of engagement of the fastener with the wall of the box and assures a firmer mounting of the fastener on the box. The four-point fastening prevents lateral as well as inward and outward bending strains from loosening the fastener and thus securely holds the fastener against such strains as will generally tend to loosen a two-prong fastener. The fasteners are preferably situated adjacent the upper edge of the wall of the box, so that the tongues 11 thereof will be in position to pass through slotted openings 17 in the ends of the box 18. With the box cover 18 in position, the projecting ends of the tongues 11 are bent

down upon the cover, either along the top or down across the ends, in an obvious manner.

In Fig. 2 I have illustrated the successive punching operations involved in the manufacture of these fasteners; and it will be noted from this figure that the stock material is in the form of strip metal of exactly the same width as that of the finished fastener. The first operation to be performed on the stock strip 20 is the punching of two diagonal incisions 21 on opposite sides of the strip, and simultaneously therewith, or subsequently, bending the triangular portions of metal formed by the acute angles of the incisions downwardly on each side of the strip and thereby forming the triangular prongs 14—14. After the cutting of these two incisions 21—21 and the bending downward of the prongs 14, which operations are preferably performed as a simultaneous operation, the stock strip 20 is fed forwardly (which is to the right as illustrated in Fig. 2) to place the diagonal incisions 21 under the punching tools which perform the next operation. This latter operation is to make two incisions 22—22 which extend substantially longitudinally from the innermost ends of the diagonal incisions 21—21, as indicated by the dotted lines at the first step and by the full lines at the second step. These longitudinal incisions 22 are preferably extended back to a point approximately even with the outer ends of the diagonal incisions 21; it will of course be obvious that these longitudinal incisions may be inclined inwardly or outwardly from a true longitudinal line for the purpose of making wider or narrower prongs, if desired. The cutting punch is preferably so designed that simultaneously with the cutting of these longitudinal incisions 22, the triangular portions of metal between the diagonal and longitudinal incisions will be bent downwardly to form the triangular prongs 12. After the performance of this operation the stock strip 20 is again advanced to place the portion of strip previously operated upon under the die which punches out the tongue 11. As indicated by the dotted line 23, the outer end of the tongue 11 is preferably punched out of the end of the next succeeding fastener. This is the preferred practice inasmuch as it provides a relatively long tongue 11 for affording greater security of fastening when engaging over the box cover. It will be noted, however, that a relatively large portion of the tongue 11 is defined between the longitudinal incisions 22, and as an alternative construction, I may separate the fasteners by cutting across this neck of metal at either end of the longitudinal incisions so as to utilize this extending neck of metal as the tongue. The present prac-

tice of continuing the tongue up into the body of the next succeeding fastener is however preferred. The tongue may of course be reversed by punching it out of the preceding instead of the succeeding fastener, in which event the tongue would extend forwardly of each finished fastener discharged from the machine. The punching out of the tongue 11 separates the fasteners, after which the completed fasteners are clenched to the end walls of the paper box, either as a subsequent operation performed by the same die head or as an independent operation.

In Figs. 4, 5 and 6, I have illustrated in a simplified showing the die mechanisms for performing these punching operations. A vertically reciprocating die head 26 carries on its under side the several male dies which are adapted to cooperate with a female die or die plate 27. The stock strip 20 is fed intermittently from right to left between the dies and the die plate during the reciprocation of the dies, suitable guide mechanism (not shown) being provided for guiding the strip in operative association with the dies. A first pair of dies 28 performs the simultaneous operation of cutting the diagonal incisions 21—21 and bending the triangular prongs 14 downwardly out of the intervening portions of metal. These dies 28 cooperate with triangular die openings in the die plate 27, into which the prongs 14 are bent. Subsequent to this operation the strip is raised and advanced forwardly to position the notched portion of the strip directly under a second pair of dies 31. This latter pair of dies cooperate with a pair of substantially square die openings 32 in the die plate 27, along the margins of which the dies 31 shear the longitudinal incisions 22 and fold down the triangular prongs 12—12. The next operation is performed by raising the strip and advancing it forwardly to position the two pairs of prongs 12 and 14 in register with a second pair of rectangular openings 33 in the die plate 27. This locates the outer or lower end of the fastener directly over a small male die 34 in the die plate 27, which male die 34 is conformed to punch out the pointed tip of the tongue 11 from the outer end of the outermost fastener unit. Cooperating with the die 34 is a spring pressed plunger 35, which is shaped similarly to the die 34 and which is embraced by a female die member 36 which is adapted to move down over the margins of the male die 34 and perform the operation of punching out the end of the tongue 11. In the performance of this latter punching operation, it will be noticed that the adjacent pairs of prongs 12 and 14 are thrust downwardly into the pair of openings 33 and are thus prevented from being turned over or in-

jured. The fasteners may be secured directly to the body of the box at this point or may be discharged into a hopper for packing.

It will be noticed from the foregoing that the gang arrangement of the dies performs the three punching operations at different points on the stock strip upon each reciprocation of the die head, and as a result the punching out of the completed fasteners follows as a continuous operation. It will also be noted that as a result of the present formation of fastener and the improved method of making the same there is an entire elimination of waste scrap metal.

I claim:

1. The method of constructing box fasteners out of a continuous strip of metal which comprises making lateral incisions in the edge of the strip and punching prongs for said fasteners by folding backwardly the metal adjacent said lateral incisions, and punching tongues on said fasteners from substantially the entire metal between said lateral incisions.

2. The method of constructing box fasteners out of a continuous strip of metal which comprises cutting lateral incisions along each edge of the strip and punching prongs for said fasteners by bending downwardly the metal adjacent said lateral incisions, and forming tongues on said fast-

eners by punching the same out of the adjacent fasteners and from substantially the entire metal between said lateral incisions. 35

3. The method of constructing box fasteners out of a continuous strip of metal which comprises making a diagonal incision along each edge of the strip, bending the metal backwardly on a line passing through the end of said incision to form a spur or prong, cutting a substantially longitudinal incision extending from the diagonal incision, bending the intervening metal backwardly to form a second prong, and punching a tongue for each fastener out of the intervening metal between the incisions on opposite sides of the strip. 40 45

4. The method of constructing box fasteners out of a continuous strip of metal which comprises cutting a diagonal incision along each edge of the strip, bending the metal backwardly on a line passing through the end of said diagonal incisions to form spurs or prongs, cutting substantially longitudinal incisions extending from the ends of said diagonal incisions, and bending the intervening metal between said incisions backwardly to form secondary spurs or prongs. 50 55 60

In witness whereof I hereunto subscribe my name this 31st day of July, 1920.

LOU W. SMITH.

DEFENDANT'S EXHIBIT "H"

G. Johnson Patent No. 1,731,667

Filed Jan. 27, 1928

Patented Oct. 15, 1929

METHOD OF MAKING AND ATTACHING FASTENER ELEMENTS

Filed Jan. 27, 1928

Fig. 1.

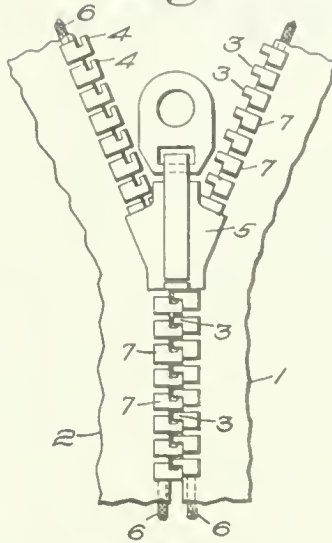


Fig. 2.

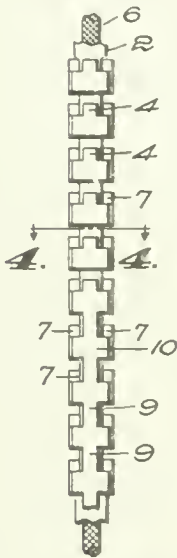


Fig. 3.

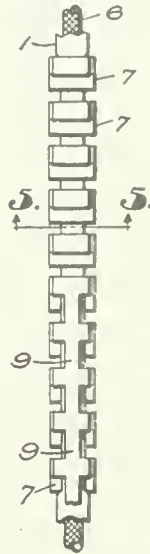


Fig. 7.

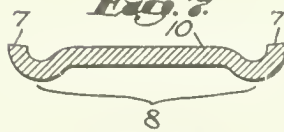


Fig. 4.

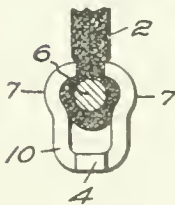


Fig. 8.

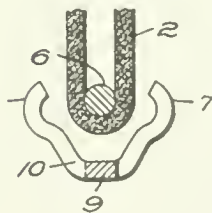


Fig. 5.

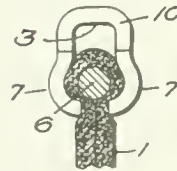
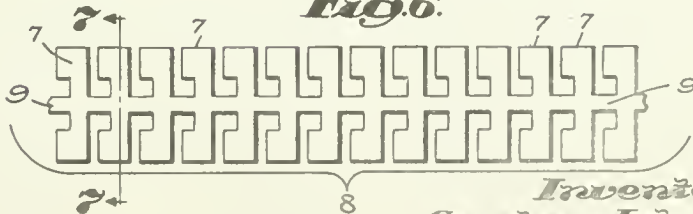


Fig. 6.



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Attys

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METHOD OF MAKING AND ATTACHING FASTENER ELEMENTS

Application filed January 27, 1928. Serial No. 249,851.

My invention aims to provide improvements in the method of making and attaching a series of fastener elements to a stringer or tape.

In the drawings, which illustrate a preferred embodiment of the invention:—

Figure 1 is a view showing a portion of each of two stringers located at the opening in a part to be closed by the fastener elements secured to the edges of the stringers and also a slider for connecting and disconnecting the fastener elements;

Fig. 2 is an edge view of a stringer carrying stud or hook members of the fastener elements, and showing the method of severing the connecting portions to make the stud or hook members after the fastener members have been attached in a strip to one edge of the stringer;

Fig. 3 is a view similar to Fig. 2, but showing sockets or eyelets and the method of attaching and securing the same;

Fig. 4 is a cross-section taken on the line 4—4 of Fig. 2 showing only a portion of the stringer in cross-section;

Fig. 5 is a section on the line 5—5 of Fig. 3;

Fig. 6 is a plan of a portion of a strip of the fastening elements before they are attached and showing how they are connected;

Fig. 7 is a cross-section on the line 7—7 of Fig. 6 showing the curved attaching portions; and

Fig. 8 is a section showing a stringer with the strip bent up and about to be clamped to the stringer.

Referring to the embodiment of my invention shown by the drawings, I have illustrated fastening means particularly adapted for various articles having an opening which must be opened and closed. For this purpose, I have shown (Fig. 1) two stringers 1 and 2 of suitable material to be attached to the article which is to be provided with the fastening means. The stringer 1, shown at the right of Fig. 1, is provided, along one edge, with a series of sockets or eyes 3 more fully hereinafter described. The stringer 2 at the left of the figure is provided with a series of studs or hooks 4 constructed as hereinafter described.

A suitable slider 5, constructed to engage the fastening elements 3 and 4 and to slide relative thereto, for engaging and disengaging the fastener elements is indicated in a general way in Fig. 1. The construction and operation of a slider for this purpose is so well-known to those skilled in the art as to make it unnecessary to go into further detail in connection therewith.

The stringers 1 and 2 may be of any suitable construction but, for the purposes of illustration, I have shown them as being made of flexible material which is doubled (Figs. 4 and 5) to provide a rounded edge to which the fastener elements are secured. A cord 6 is inserted at the rounded edge so as to form a bead to cooperate with the attaching portions 7 of the fastening elements to prevent the fastening elements from being pulled loose when under lateral stresses.

Any suitable machine may be used to form the strip 8 of fastening elements, shown in Fig. 6, therefore, it is unnecessary to go into detail in illustrating and describing a machine for this purpose. It will be readily understood, by persons skilled in the art, that, by passing a strip of metal, between suitable dies, portions of the strip 8 may be cut out along each edge, as indicated in Fig. 6.

The strip 8, shown in Fig. 6, is provided, along its longitudinal edges, with the attaching portions 7, and between the attaching portions 7 are the fastener portions and the connecting portions 9. It should be understood that the strip 8 may be made into either a series of socket or eye-shaped elements 3 or a series of studs or hooks 4 as desired depending upon how much of the connecting portions 9 is removed.

The strip 8 may be formed and attached in any suitable manner but for the purposes of illustration I have shown (Fig. 7) the attaching portions 7 as being first curved in cross-section to fit the curve of the beaded portion of a stringer. The strip is thereafter pressed into the form shown in Fig. 8 and it is only necessary to press the attaching portions 7 against opposite sides of a stringer at one edge to secure it firmly there- to, as shown in Figs. 4 and 5. When a strip

8 is attached to a stringer the fastening portions extend from one edge in the form of loops 10 (Figs. 4 and 5) to provide the eyes 3 or to support the hooks 4 as the case may be.

5 The object of forming the fastener elements in strips is to provide for accurate spacing of the fastener elements upon the part which carries them so that they will make positive engagement with cooperating
10 fastener elements with the least possible amount of effort when the slider 5 is moved along the two rows of fastener elements. This method of attachment is also very simple and the fastener elements are very easy to handle
15 when provided in strips.

Another important reason for providing the fastener elements in strips, when formed as illustrated and described, is that a strip may be made into a series of separate sockets
20 or eyes or studs or hooks as desired. By cutting away all of each of the connecting portions 9, as shown in Figs. 3 and 5, a series of sockets or eyes 3 is provided. If, however, as shown in Figs. 2 and 4, a portion
25 of each of the connecting portions 9 is left so that it extends from the loop 10, a series of studs or hooks 4 is provided for cooperative engagement with the loops 3. (Note that in
30 Figs. 2 and 3 some of the fastener elements have been cut apart while the others remain in strip form to illustrate my method of attaching the fasteners in strip form and then cutting them apart so that they may be
35 free to act independently of each other.) Any suitable mechanism may be used to sever the connecting portions 9 and they may be cut apart by hand or automatically by machine, as by sawing, milling or punching.

I am aware that my invention may be embodied in forms other than that shown and described without departing from the scope of my invention and, therefore, reference is made to the following claims to indicate the scope of my invention.

45 Claims:

1. The method of making fastener elements adapted to be secured to a stringer which comprises forming the fastener elements in a strip with connecting means between each fastener
50 element, fastening the strip to a stringer and then severing the connecting means to provide a series of independent fastener elements which may be engaged with cooperating fastener elements on another stringer.

2. The method of making fastener elements adapted to be secured to a stringer which comprises forming the fastener elements in a flat strip with connecting means between each
60 fastener element bending the strip to form a series of loops, attaching the bent strip to one edge of a stringer and then cutting the fastener elements apart at the connecting means to provide a series of independent
65 fastener elements which may be free to co-

operate with other fastener elements on another stringer.

3. The method of making a fastening device including a stringer and a series of uniformly spaced fastening elements attached to the stringer which comprises pressing the fastener elements from a strip of metal, leaving connecting portions between the fastener elements so that they may be attached to the stringer in a strip to secure uniform spacing, bending the strip and attaching it to one edge of the stringer and then severing the connecting portions to provide a series of independent fastener elements which may yield with the stringer for engagement with cooperating fastener elements carried by another stringer.

4. The method of making a fastening device including a stringer and a series of uniformly spaced fastening elements attached to the stringer which comprises pressing the fastener elements from a strip of metal, leaving connecting portions between the fastener elements so that they may be attached to the stringer in a strip to secure uniform spacing, bending the strip and attaching it to one edge of the stringer and then cutting away a portion of or all of each connecting portion to provide for a series of eye-shaped fastening elements or hook-shaped fastening elements as desired.

5. The method of making a fastening device including a stringer and a series of uniformly spaced fastening elements attached to the stringer which comprises pressing the fastener elements from a strip of metal, leaving connecting portions between the fastener elements so that they may be attached to the stringer in a strip to secure uniform spacing, bending the strip and attaching it to one edge of the stringer and then cutting away all of each of the connecting portions to provide a series of spaced eyes.

6. The method of making a fastening device including a stringer and a series of uniformly spaced fastening elements attached to the stringer which comprises pressing the fastener elements from a strip of metal, leaving connecting portions between the fastener elements so that they may be attached to the stringer in a strip to secure uniform spacing, bending the strip and attaching it to one edge of the stringer and then cutting away a portion of each of the connecting portions and leaving a portion of each to provide a series of hooks.

7. The method of making fastening means including a stringer and a series of spaced fastening elements, the fastening elements having attaching portions and fastener-engaging portions which comprises providing the fastening elements in a strip provided with connecting portions between the fastener-engaging portions, securing the strip to one edge of the stringer and severing the strip at the connecting portions.

8. The method of making fastening means including a stringer and a series of spaced fastening elements, the fastening elements having attaching portions and fastener-engaging portions, which comprises pressing a strip of metal to provide fastening portions at the center, attaching portions at the sides and connecting portions between the fastening portions, attaching the pressed strip to one edge of the stringer and then cutting the fastening portions apart at the connecting portions.

9. The method of making and attaching a series of fastener elements to a stringer which comprises forming the fastener elements in strip 8, bending and attaching the strip to stringer by means of the attaching portions 7 and then cutting away all or portions of connecting means 9 which hold the fastener elements together prior to and while being attached to a stringer.

10. A blank having a series of fastener elements for attachment to a stringer, said blank having attaching means at its opposite edges or securing the blank to one edge of a stringer, means along the center of the blank adapted to provide fastening elements for cooperation with other fastening elements and connecting means normally holding all of the fastening elements together but being removable to separate the fastening elements after the blank has been attached to a stringer.

In testimony whereof, I have signed my name to this specification.

GUSTAV JOHNSON.

DEFENDANT'S EXHIBIT "1"

L. Hommel Patent No. 1,659,266

Filed Dec. 31, 1924

Patented Feb. 14, 1928

Feb. 14, 1928.

1,659,266

L. HOMMEL

MACHINE FOR MAKING METAL FASTENERS AND THE LIKE

Filed Dec. 31, 1924

5 Sheets-Sheet 2

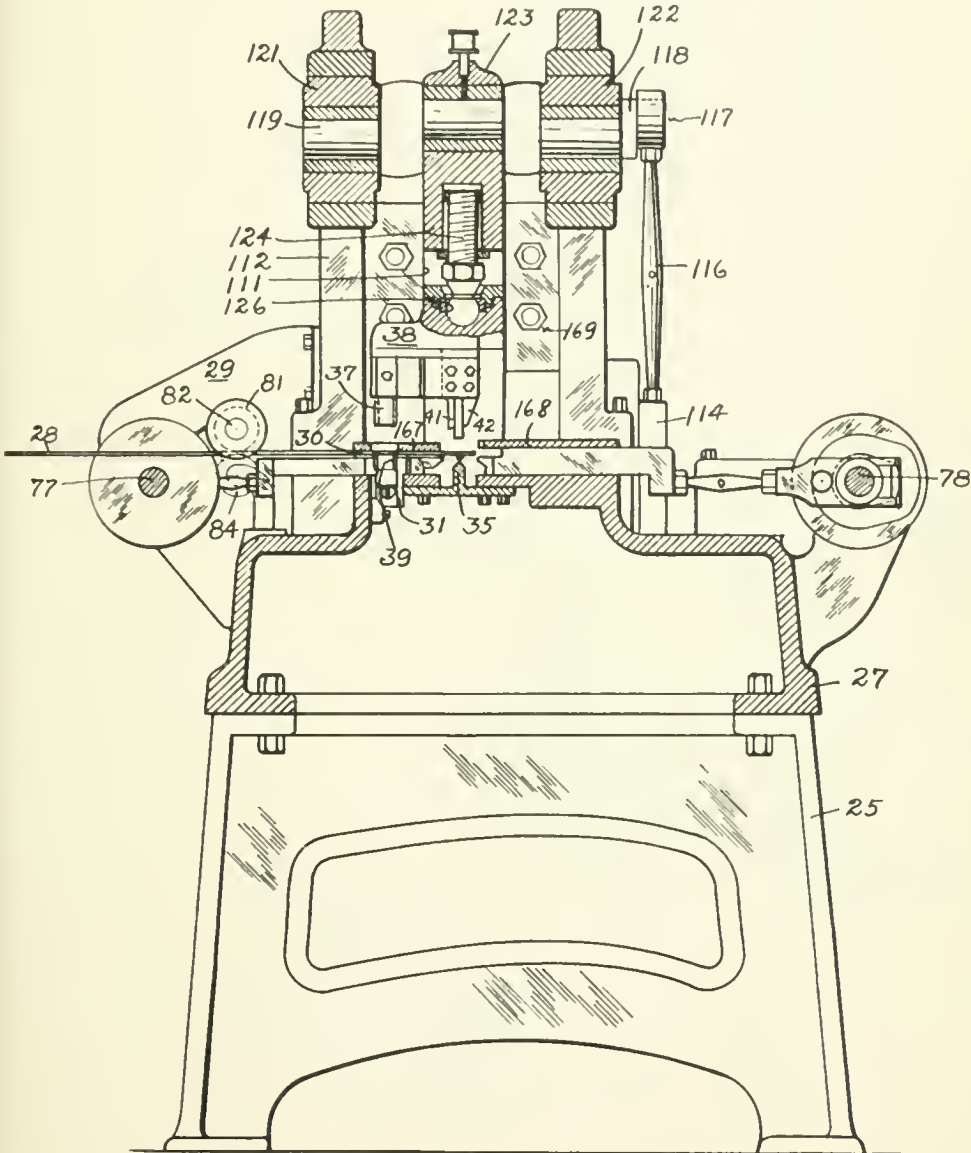


FIG. 2

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MACHINE FOR MAKING METAL FASTENERS AND THE LIKE

Filed Dec. 31, 1924

5 Sheets-Sheet 3

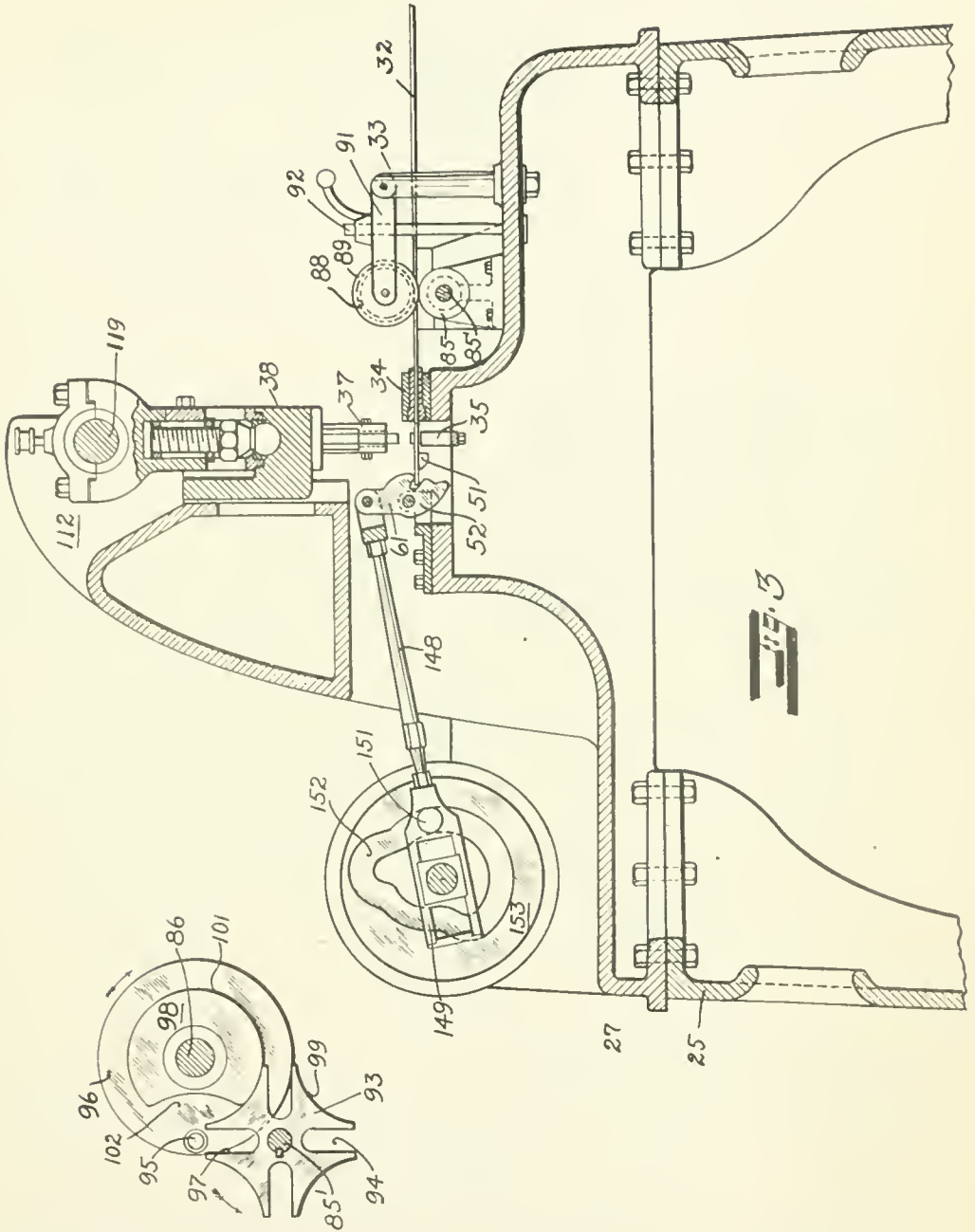


Fig. 4

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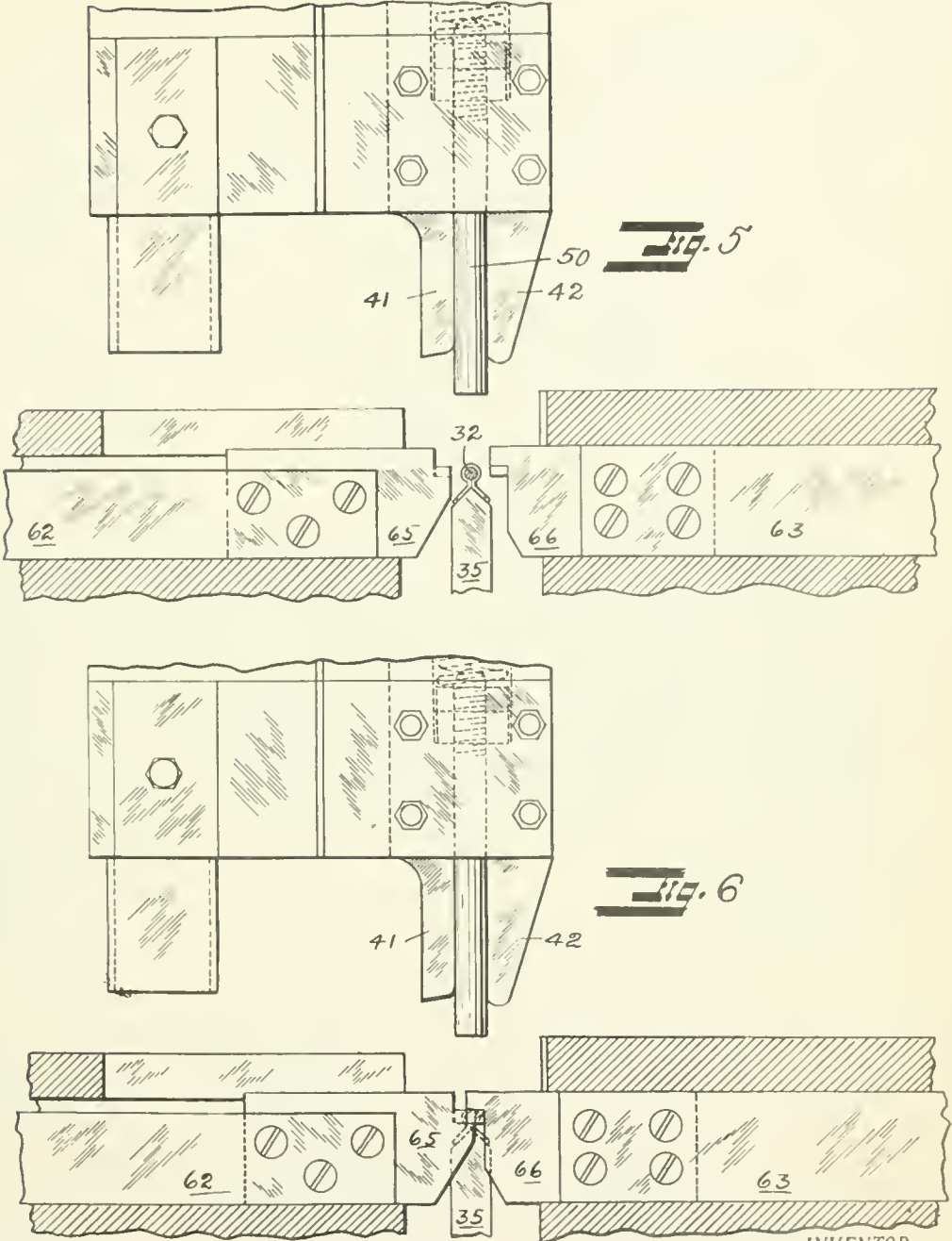
1,659,266

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MACHINE FOR MAKING METAL FASTENERS AND THE LIKE

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5 Sheets-Sheet 4



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MACHINE FOR MAKING METAL FASTENERS AND THE LIKE

Filed Dec. 31, 1924

5 Sheets—Sheet 5

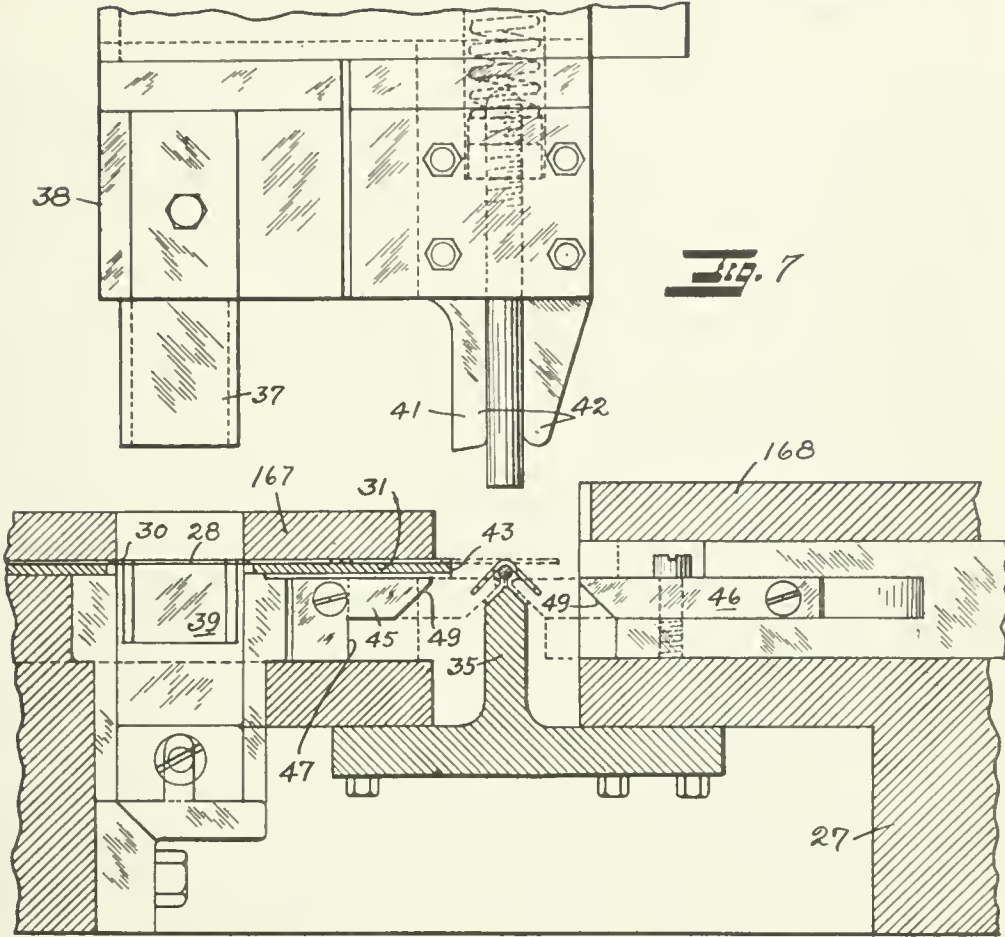


Fig. 7

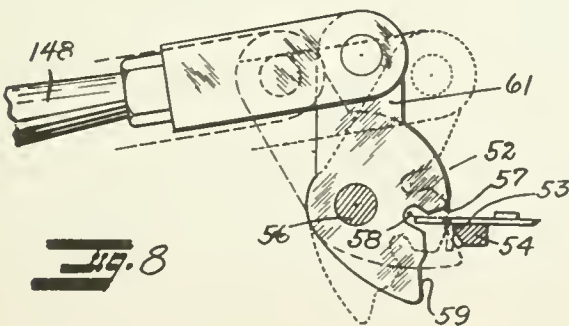


Fig. 8

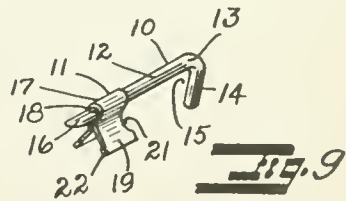


Fig. 9

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MACHINE FOR MAKING METAL FASTENERS AND THE LIKE.

Application filed December 31, 1924. Serial No. 759,051.

My invention relates to a machine for making devices such as wire fasteners and the like, and in the present embodiment the machine is particularly adapted for making fasteners having a nail portion and a spacing member frictionally held on the nail portion.

An object of the invention is to provide a machine which will form a separate nail and spacing member and position the latter in frictional and slidable engagement on the shank of the former.

Another object of the invention is to provide a machine of the character described which affords a maximum output of fasteners without undue strain and wear of the machine parts.

My invention possesses other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description of the preferred form of the invention which is illustrated in the drawings accompanying and forming part of the specification. It is to be understood that I do not limit myself to the showing made by the said drawings and description, as we may adopt variations of the preferred form within the scope of our invention as set forth in the claims.

Referring to said drawings:—

Figure 1 is a plan view, partly in section, of the machine of our invention.

Figure 2 is an end sectional view taken on the line 2—2 in Figure 1.

Figure 3 is a side sectional view taken on the line 3—3 in Figure 1.

Figure 4 is an enlarged side view of an intermittent gearing used in the device.

Figures 5 to 7 inclusive are enlarged fragmentary views taken substantially on the line 2—2 in Figure 1 showing the relations of certain of the fastener forming parts at different times in the fastener forming cycle.

Figure 8 is an enlarged side view of a bending cam used in my invention operatively disposed with respect to a wire end which is to be bent to desired form.

Figure 9 is a perspective view of a fastener which the present embodiment of the machine of my invention is particularly arranged to form.

A detailed description follows:

Briefly expressed, the present embodiment of my invention comprises a machine for forming a fastener having nail and spacing member portions, such as the fastener par-

ticularly illustrated in Figure 9. The materials of which the fastener is formed comprise wire of suitable size and a metal ribbon of suitable width and thickness, both materials being adapted to be continuously and automatically fed into the machine by means provided thereon. The head portion of the nail is arranged to be shaped by the operation of a cam to bend the wire end around a suitable form. During the formation of the nail head, the spacing member, which has been previously stamped from the ribbon by means of a die, is formed about the nail shank to frictionally grip the same by the successive operation of pairs of vertically and horizontally acting forming members cooperating with an anvil. The completed fastener is then arranged to be released from the machine by means which simultaneously point the nail and cut the same from the wire stock. The machine is adapted to be power driven, the parts previously referred to being suitably actuated to perform the necessary operations in proper sequence, as more particularly described hereinafter.

The nail 10 and associated spacing member 11 of the fastener which the present embodiment of my invention is particularly adapted to form are as shown in Figure 9. The nail portion 10 comprises a shank 12 having a relatively sharp pointed bend 13 formed at one end thereof and serving as a head for the nail, the bent over portion 14 forming an arcuated crotch 15 between itself and the shank. The other end of the shank 12 is preferably sharpened to provide a driving point 16. The spacing member 11 is preferably formed of a blank of metallic ribbon by bending it at an intermediate portion 17 thereof to form a recess 18 in which the shank 12 is adapted to fit tightly but slidably. As here shown, the ends 19 of the spacing member are angularly disposed and are provided with arcuate notches 21 at one side and points 22 at the other.

To form a nail and spacing member, such as described above, I provide a machine having a base 25 on which is mounted a drive motor 26 and a frame 27 which carries the nail forming means of my invention. The ribbon 28 from which the spacing members 11 are formed is arranged to be fed into the machine by means of the feeding mechanism 29 and is then passed through

a longitudinal guideway 30 provided in the upper surface of a horizontally positioned fixed die-plate 31 to project therefrom. The wire 32 from which the nail portions of the fastener are formed is arranged to be fed into the machine through the feeding mechanism 33 and thence through and beyond a guide block 34 which is mounted on the frame for horizontal reciprocative movement transversely of the wire. At the beginning of a fastener forming cycle the projecting portion of the wire is disposed transversely of the projecting portion of the ribbon in a line parallel to and closely underlying the plane of the ribbon and extends beyond the ribbon. Immediately beneath the portion of the extended wire adjacent the guide block 34 is an anvil 35 in the form of an inverted V fixedly positioned on the frame 27 and having an upper edge extending parallel to, and adapted to serve as a seat for the wire.

The notches 21 and points 22 of the spacing member 11 are arranged to be formed in the ribbon by means of male cutting dies 37 mounted on opposite sides of a vertically moving plunger 38 and cooperating with female dies 39 mounted on the die-plate 31, the pieces removed falling through the die-plate apertures into the space defined by the base 25. Also mounted on the plunger 38 for movement therewith is a shearing blade 41 which also serves as one member of a two-point bending die 42, the former being adapted to cooperate with the forward edge 43 of the die plate 31 to sever the spacing member blank from the ribbon, and the latter functioning, after pressing the severed blank and underlying wire upon the anvil 35, to bend the blank about its center to straddle the anvil. Since the wire was pressed slightly downward to contact with the anvil, the raising of the plunger 38 after completion of the bend forming stroke allows the wire to spring slightly upward, raising the blank with it to a position slightly clear of the anvil, as shown in detail in Figure 7. With the bent blank in raised position, oppositely disposed forming members 45 and 46 are advanced horizontally to simultaneously cooperate in the formation of the recess 18 of the spacing member 11 by acting in a plane slightly below that of the axis of the wire to press the sides of the blank together to firmly embrace the wire, the members 45 and 46 being here shown extending from oppositely positioned reciprocable blocks 47 and 48 mounted on the frame. It will be noted that the side faces of the anvil 35 cooperate with the lower faces 49 of the members 45 and 46 to determine the desired angular relation of the ends 19 of the now completed member 11, as shown in Figure 7. The bending die 42 is preferably provided with a spring pressed plunger 50

which is adapted to maintain a resilient pressure on the blank during the forming of the spacing member 11 thereof and thereby hold it properly positioned across the wire.

While the member 11 is thus being formed, a movable anvil 51 mounted for horizontal movement in the frame of the machine and having an end section similar to the desired shape of the nail crotch is moved to a position beneath the inner part of the protruding wire end so that a portion thereof will overhang the anvil. A cam 52 suitably mounted for rotation about a horizontal axis and in a plane including the wire, is then actuated to first bend the wire end which overhangs the anvil downwardly over the edge 53 of the anvil and then bend the end inwardly to lie against the face 54 of the anvil, which is here shown angularly disposed from the vertical plane, it being now noted that the crotch 15 and head 13 of the nail portion 12 of the fastener have thus been simultaneously formed. As particularly shown, in Figure 8, the cam 52 is mounted on a pivot 56 and is provided with a point 57 which is so positioned with respect to the anvil that when brought downwardly from above on a wire end extending therefrom, the wire end will be bent downwardly around the edge 53 of the anvil, the cam being formed with a transverse recess 58 extending inwardly of and below the point 57 and arranged to receive the wire end prior to the bending operation. The lower surface 59 of the recess 58 is preferably formed to conform with the shape of the face 54 of the anvil, so that when brought against the wire end which has been bent downwardly over the anvil, it will bend the same inwardly against the anvil to complete the crotch 15. It will now be noted that in order to perform the before mentioned functions, the cam 52 must be reciprocally rotated through a small arc during part of a fastener forming cycle, and, accordingly, in the present embodiment of the invention, the cam 52 is provided with an integral lever arm 61 by which such motion may be imparted to the cam in a suitable manner. By referring to Figure 8, it will be noted that the cam 52 is shown therein in full lines in wire receiving position, in dotted lines as positioned at the conclusion of the downward bending operation, and in dash lines as positioned at the conclusion of the inward bending operation.

Mounted on reciprocable blocks 62 and 63 and positioned between the forming members 43 and 44 and the end surface 64 of the guide-block 34, are cooperating cutters 65 and 66 which are arranged to be brought transversely together to cut the wire to form a notch therein, said notch having a transverse side parallel to the surface 64 and a bevelled side sloping away from such transverse side. The relation of the cutters 55

and 56 before and during the cutting operation is shown in detail in Figures 5 and 6.

With the nail and spacing members thus formed and assembled in proper relation, and the wire notched and firmly held between the cutters at the point of the nail, a transverse horizontal movement of the block 34 is arranged to be effected so as to sever the fastener from the remaining wire. The anvil 49 is arranged to be then withdrawn and the members 45 and 46 separated, so that the fastener may fall clear of the forming mechanism and the machine be enabled to start the next cycle of operations.

Driving of the machine is here shown arranged to be effected from a main drive-shaft 71 which is positioned transversely of the frame adjacent one end thereof and is operatively connected to the motor 26 through a clutch 72, a shaft 73, and suitable gearing arranged in the housing 74. The shaft 71 is mounted in the bearings provided in the housing 74, and in a bearing 74'. Operatively connected to the opposite ends of the shaft 71 by means of pairs of bevel gears 75 and 76 are secondary shafts 77 and 78 respectively, mounted in sets of bearings 79. In the present embodiment, the shafts 71, 77 and 78 are arranged to rotate at the same rate, one revolution thereof serving to complete one fastener making cycle.

Feeding of the ribbon 28 through the feeding mechanism 29 is here shown arranged to be effected by driving an upper roll 81 thereof carried on a shaft 82 by means of a suitable intermittently acting mechanism operatively connected between the shafts 77 and 82. The driven roll 81 is preferably corrugated and is adapted to firmly hold the ribbon against a cooperating roll 84 so that the ribbon may be advanced when the driven roll is turned.

The wire 32 is arranged to be fed through the feeding mechanism 33 by means of a lower roll 85 of the latter, which is mounted on a shaft 85' and is arranged to be rotated by means of a suitable intermittently acting mechanism operatively connected to the shaft 77 by a shaft 86 and bevel gearing 87. An upper roll 89 which is adapted to cooperate with the roll 85, is provided having a circumferential groove 88 in which the wire is adapted to be positioned, the surface of said groove being preferably transversely corrugated so as to form corresponding impressions on the wire. The circumferential surface of the roll 84 is also corrugated, but has no groove formed therein. Pressure between the rolls sufficient to flatten opposite sides of and form the corrugations in the wire as it passes therebetween, is arranged to be adjustably secured by mounting the upper roll 89 on one end of a lever 91 pivotally secured at its other end to the frame, the lever being arranged to be actuated by turning the nut

on a bolt 92 secured to the frame and extending through an aperture midway of the lever 91. Adjustment between the rolls is thus made possible either for different depths of corrugation or different sizes of wire. It is to be noted that by corrugating the wire, a nail shank is provided which will not readily turn in the spacing member 11 or in the material into which it may be driven.

As here shown, the mechanisms by which the feeding rolls 81 and 84 are arranged to be intermittently driven comprise a type of intermittent gear movement, the gearing used for converting the uniform rotation of the shaft 86 into an intermittent rotation of the shaft 85', which is parallel thereto and carries the roller 85, being shown in detail in Figure 4. Fixed to the shaft 85' is a driven member 93 provided with symmetrically disposed radially extending slots 94 of uniform width while a planetary roller 95, suitably mounted on a member 96 for rotation with and around the shaft 86 in coplanar relation with the member 93 is arranged to engage successive slots 94 and thereby serve as a driving means for the member 93. The shafts 85' and 86 are so spaced apart that when the axis of one slot 94 is tangent to the arc of movement of the roller 94, the axis of an adjacent slot will also be tangent to the same arc of movement of the roller but on the opposite side of the line of centers of the shafts. In this manner, with a slot in tangential relation to the arc of movement of the roller, the rotation of the shaft 86 will cause the roller to enter the slot and bear against the forward side 97 thereof to cause the rotation of the member 93 until such a time as it again assumes a position tangent to the arc of movement of the roller, at which time the roller will leave the slot. It will now be noted that the rotative movement thus imparted to the member 93 and its shaft 85' will be one wherein the rate of rotative movement produced will accelerate gradually to a maximum and then as gradually decrease, thus avoiding any sudden movements or impacts of the feeding mechanism which would result in increased wear and a noisy operation of the parts. To insure the proper positioning of the member 93 at all times relative to the roller 95, a circular disc 98 is provided which is coaxially mounted on the member 96 in coplanar relation with the member 93, and each portion of the periphery of the member 93 is provided between the slot portions with concave surfaces 99 having substantially the same radius of curvature as the edge surface 101 of the disc and arranged to slidably engage the latter during the time that rotation of the member 93 is not being effected by the roller. Since rotation of the member 93 would cause a portion of a surface 99 to bear against the disc surface 101; it will be evident that rotation

of the member 93 will thus be prevented. To allow rotation of the member 93 by the roller, a recess 102 is provided in proper position in the disc edge, such recess being here shown by arcuate form, the center of curvature thereof being colinear with the axes of rotation of the roller 95 and shaft 86 and the radius thereof very slightly exceeding the extreme radius of the member 93. In this manner, it will now be noted that an intermittent gear structure has been provided which is at all times positive in its action and one which, at the same time is smooth and quiet in operation.

The plunger 38, which carries the cutting dies 37, shear blade 41, and bending die 42, is arranged for reciprocation in a guideway 111 provided on an upper portion 112 of the frame by means of operative connection to the drive shaft 71. Mounted on the shaft 71 is an eccentric disc 113, about which an eccentric strap 114 carried on a connecting rod 116 is mounted. The rod 116 is connected at its other end to a crank pin 117, the latter being carried by a crank arm 118 provided at the end of a crank shaft 119, it being noted that the shaft 119 is suitably journaled in a pair of bearings 121 and 122 with its axis horizontal. A second crank 123 is provided on the shaft 119, preferably between the bearings thereof, and is operatively connected to the plunger 38 by means of a connecting rod 124 of adjustable length, the rod being here shown pivotally connected to the crank 123 in a usual manner and to the plunger 38 by means of a universal ball and socket joint 126, the ball portion of the latter being here shown carried on the connecting rod 124. The arc of motion of the crank pin 117 is preferably arranged to have a greater radius than is the radius of the arc of eccentricity of the eccentric disc 84, so that the crank pin will be oscillated through an arc of slightly less than 90 degrees as the connecting rod 86 is reciprocated. This arrangement for oscillating the crank shaft 119 is particularly designed to prevent difficulties with dead centers which might occur if the pin 117 were allowed to travel through a complete arc.

Simultaneous cooperative movement of the blocks 47 and 48 which carry the forming members 45 and 46 respectively is here shown arranged to be effected by means of heart or disc cams 131 and 132 mounted respectively on the shafts 77 and 78. Each of the cams 131 and 132 is provided with a roller groove 133 formed in a side face thereof in which a roller 134 carried on a fork 136 which spans the shaft and is carried on a connecting rod 137, is arranged to engage. The other ends of the rods 137 are adjustably attached to the blocks 47 and 48. In this manner, reciprocative movements of the blocks are produced in accordance with the

shape of the roller groove, it being obvious that the roller grooves 133 of the cams 131 and 132 are necessarily complementary in form and action.

The movable anvil 51, which is utilized in forming the crotch of the nail, is here shown operated from the shaft 78 by means of a roller 141 carried on a fork 142 and engaging in a roller groove 143 formed in the opposite side of the cam disc 132 from the fork 136 associated therewith. An adjustable rod 144 connects the fork 142 to a block 146 which carries the anvil 51, the block being slidably mounted in a suitable guideway 147 provided in the frame.

The bending cam 52 is arranged to be oscillated upon rotation of the shaft 71 by means of a cam operated connecting rod 148 pivotally secured at one end to the lever arm 61 of the cam and carrying a fork 149 at the other end. Mounted on the fork is a cam roller 151 which is arranged to engage in a groove 152 provided in one face of a cam disc 153 mounted on the shaft 71, the rotation of the disc being thus arranged to impart the desired reciprocative movement to the rod 148 and thus to the bending cam 52.

Simultaneous cooperative movement of the blocks 62 and 63 which carry the cutters 65 and 66 is here shown arranged to be accomplished by means of connecting rods 155 and 156 respectively which are arranged to be reciprocated by means of eccentrics 157 and 158 operatively associated therewith and respectively carried on the shaft 77 and 78. As here shown, the eccentric 157 is out of alignment with the blocks 62 and 63 and the eccentric 158, and the motion of the rod 155 is accordingly communicated to the block 62 by means of a rocker arm 159 of such width that attachment of the rod and block to opposite sides thereof will serve to position the rod and block in required parallel relation.

The guide block 34, which, as hereinbefore mentioned, is moved to finally sever the completed fastener from the wire, is secured to a slidable member 161 reciprocatively mounted on the base and operatively connected to the shaft 78 by means of a rod 162 terminating in a roller carrying fork 163, the roller 164 thereof cooperating with a groove 165 formed in a heart-cam disc 166 mounted on the shaft to thereby produce the desired motion of the block 34.

By referring to the drawings, it will be seen that the blocks 47 and 62 are held positioned in their guideways by means of a removable plate 167. The blocks 46, 48, 63 and 34, all of which are actuated from the shaft 78 and are mounted in adjacent and parallel bearing grooves formed in the frame, are held in position by means of the removable plate 168. Removable plates 169

also serve to hold the plunger 38 in the guideway 82.

It will be evident from the foregoing that the order and extent of the movements of the fastener forming cycle in relation to the movement of the plunger 38 is entirely controlled by means of the form and relative positioning of the roller grooves in the various cam plates and the eccentricities of the eccentrics employed, the succession of desired operations being thus readily controllable, and since any or all of the dies, cutters and various fastener forming tools may be adjusted or replaced, the proper performance of the various forming operations may be readily maintained. Furthermore, it will be obvious that on account of the removability and independent operation of the various forming mechanisms, the machine is readily adaptable for forming other articles of manufacture than the fastener herein specifically described.

I claim:—

1. A machine for forming spacing members about the shank of a nail, comprising means for forming and positioning a blank for said member, a fixed anvil in the shape of an inverted V on which said nail shank is adapted to be seated and across which said blank is adapted to be positioned, a vertically acting means for bending said blank to the shape of said anvil, and independent cooperating means for bending a portion of said blank to encircle said shank.

2. A machine for making a fastener having a nail element and a spacing element formed about the shank thereof comprising feeding devices for intermittently and simultaneously positioning the requisite amount of material for forming said spacing element about the shank of said nail element, means for stamping and severing a spacing element blank, a fixed anvil on which said spacing element is adapted to be shaped, means for shaping said spacing element on said anvil and about said shank, a movable anvil about which an end of said nail element is adapted to be bent to form a head therefor, a cam operable to completely shape said head about said movable anvil, and means operable for severing and releasing said fastener when completed.

3. A machine for making a fastener having nail and spacing portions, comprising feeding mechanisms adapted to supply and position requisite amounts of materials of which to form said portions, a cutting die adapted to sever a blank for said spacing portion, a fixed anvil in the form of an inverted V on the apex of which the shank of said nail portion is adapted to be longitudinally positioned, a downwardly acting die adapted to bend said blank over said shank and anvil, plungers movable horizontally and adapted to complete the bending of said

blank to encircle said shank, means for simultaneously forming a head on said nail portion, and means operated independently of said plungers for sharpening and severing a completed fastener.

4. A machine for making in assembled form a fastener having nail and spacing portions, comprising a mechanism adapted to simultaneously feed and position at right angles in substantially the same horizontal plane the requisite amounts of materials of which to form said portions; a fixed anvil in the form of an inverted V having the apex thereof arranged to receive the shank of said nail portion; a movable anvil about which a head for said nail is adapted to be formed by bending an end of the nail portion material; a cam arranged to completely form said head about said movable anvil; a downwardly acting member having members independently mounted thereon arranged to substantially simultaneously form a blank for a spacing portion, sever the protruding blank, and bend the severed blank over said shank; cooperating members movable horizontally and adapted to complete the bending of said blank to encircle said nail shank; independent means adjacent said plungers for simultaneously sharpening and gripping a completed fastener; means for transversely moving said wire adjacent said gripped point to shear said fastener therefrom; and means operative to cause the operations of said various fastener forming means in proper sequence.

5. A machine for making in assembled form a fastener having nail and spacing portions formed of wire and metallic ribbon respectively, comprising a frame; shafts mounted on said frame and operatively connected for simultaneous rotation; an intermittently acting wire feeding mechanism operatively associated with one of said shafts; a movable guide block through which said wire is adapted to be fed; an intermittently acting mechanism for feeding the ribbon transversely of and slightly above the wire and operatively associated with one of said shafts; a fixed die plate over which said ribbon is adapted to pass; an anvil in the form of an inverted V and arranged at the top edge thereof to receive the wire; cooperating mechanisms including a movable anvil and a cam for completely forming a head on said nail portion by bending, each of said mechanisms being operatively connected to one of said shafts by means including a heart cam; a vertically movable head having removably mounted thereon a die adapted to cooperate with said die plate to perforate the ribbon lying thereover, a cutter blade adapted to cooperate with the extremity of said die plate to sheer from the ribbon a spacing member blank, and a bending die adapted to bend said blank over

said wire, said movable head being arranged
 to be reciprocated by means including an ec-
 centric operatively connected to one of said
 shafts; cooperating members adjacent the
 5 guide block for completing the formation
 of said spacing member portion about the
 shank of said nail portion, said members
 being mounted in reciprocable blocks ar-
 ranged to be reciprocated by means includ-
 10 ing independent eccentrics mounted on said
 shafts; cooperating members for notching
 and gripping the portion of the wire adapted
 to form the point of the nail portion of the
 fastener, said members being mounted on
 15 independently reciprocable blocks arranged
 to be reciprocated by means including heart
 cams mounted on said shafts; and means

including a heart cam for transversely mov-
 ing said guide block when the wire is held
 by said gripping means to shear said fasten- 20
 er from the wire adjacent the gripped point.

6. A machine for forming spacing mem-
 bers about the shank of a nail, comprising
 means for forming and positioning a blank 25
 for said member, an anvil on which said
 nail shank is adapted to be seated and across
 which said blank is adapted to be positioned,
 and means cooperating with said anvil to
 bend said blank to encircle said shank.

In testimony whereof, I have hereunto 30
 set my hand at Oakland, California, this
 26th day of December, 1924.

LEON HOMMEL.

DEFENDANT'S EXHIBIT "J"

E. H. Binns et al. Patent No. 2,026,413

Filed Nov. 21, 1930

Patented Dec. 31, 1935



METHOD AND MACHINE FOR MAKING FLEXIBLE CLOSURES

Filed Nov. 21, 1930

27 Sheets-Sheet 1

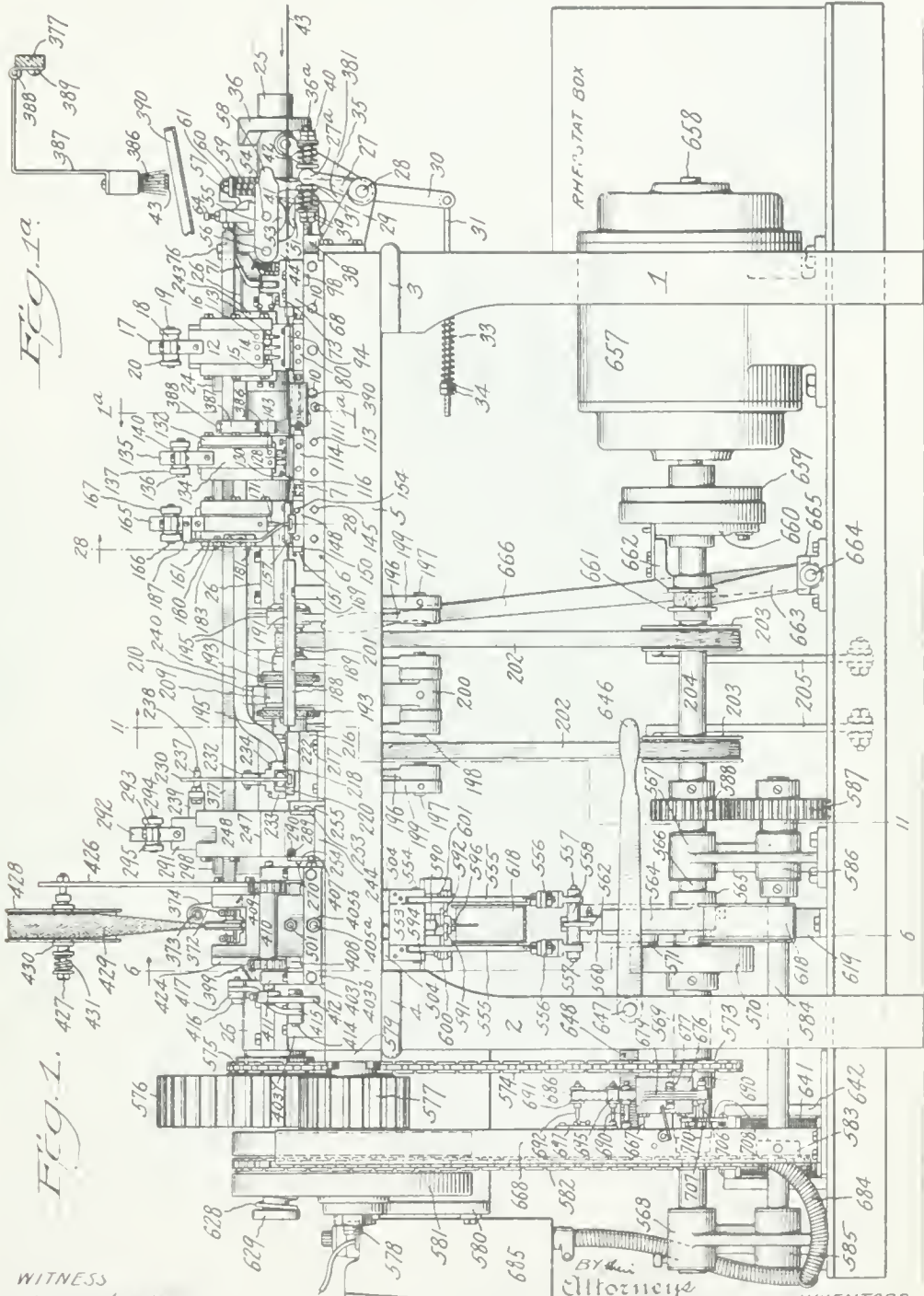


FIG. 1a

FIG. 1

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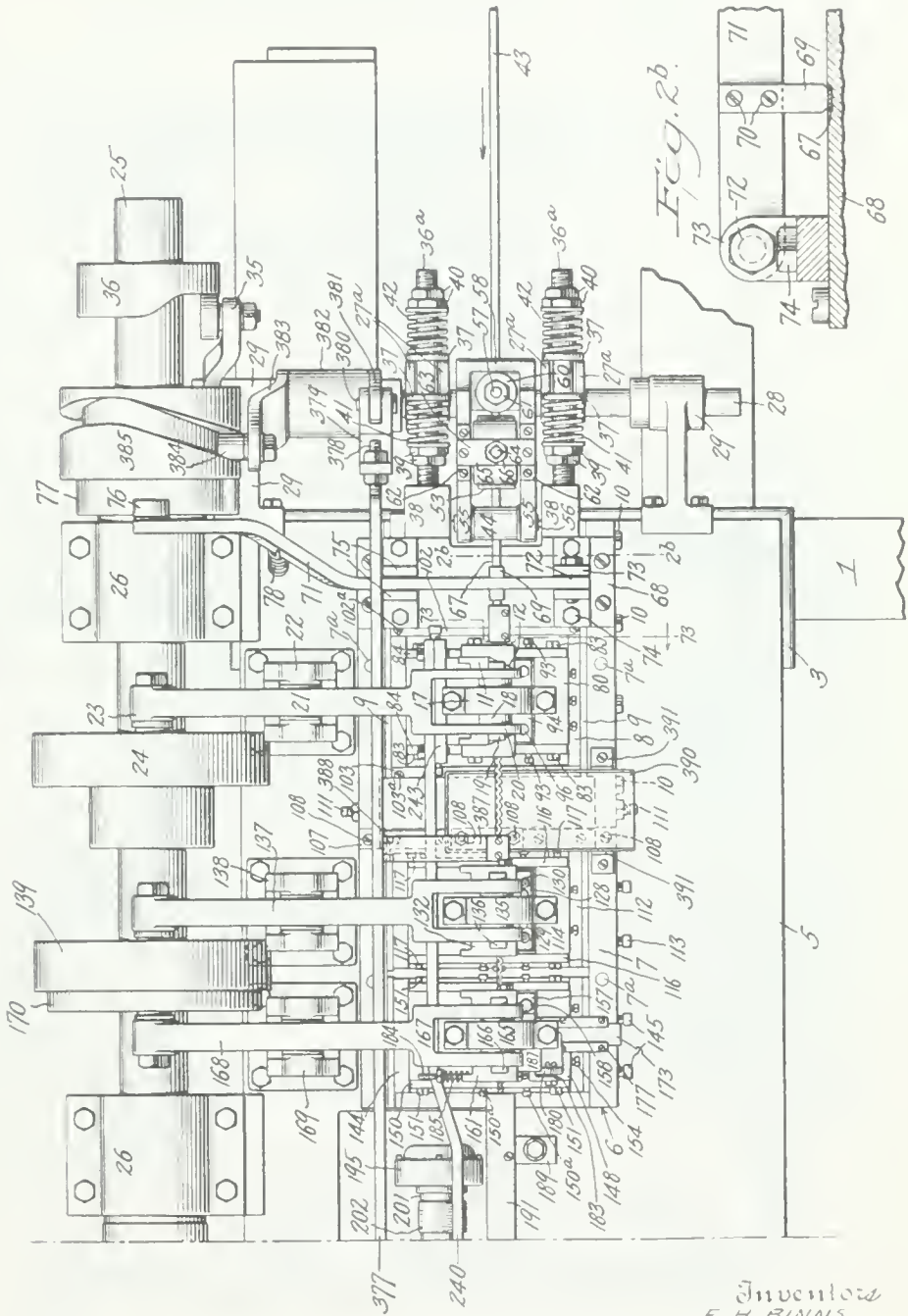


METHOD AND MACHINE FOR MAKING FLEXIBLE CLOSURES

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27 Sheets-Sheet 2

Fig. 2.



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METHOD AND MACHINE FOR MAKING FLEXIBLE CLOSURES

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27 Sheets-Sheet 5

Fig. 57.

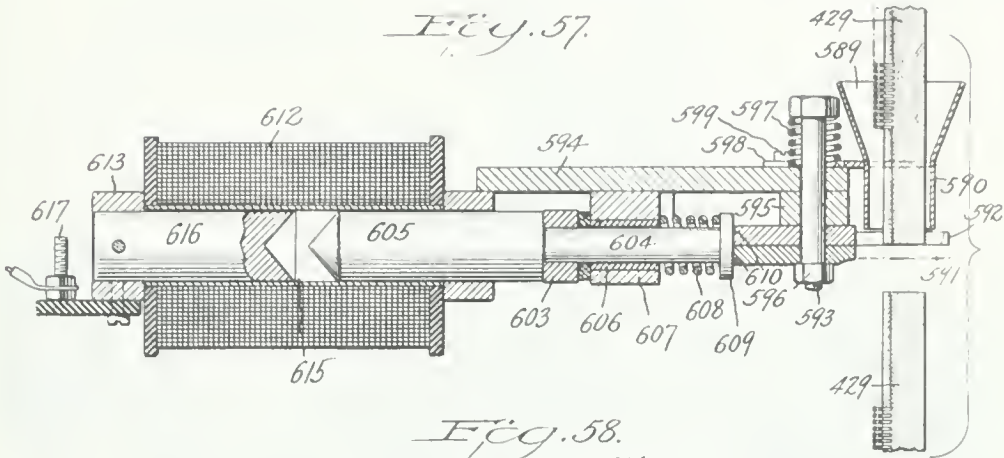


Fig. 58.

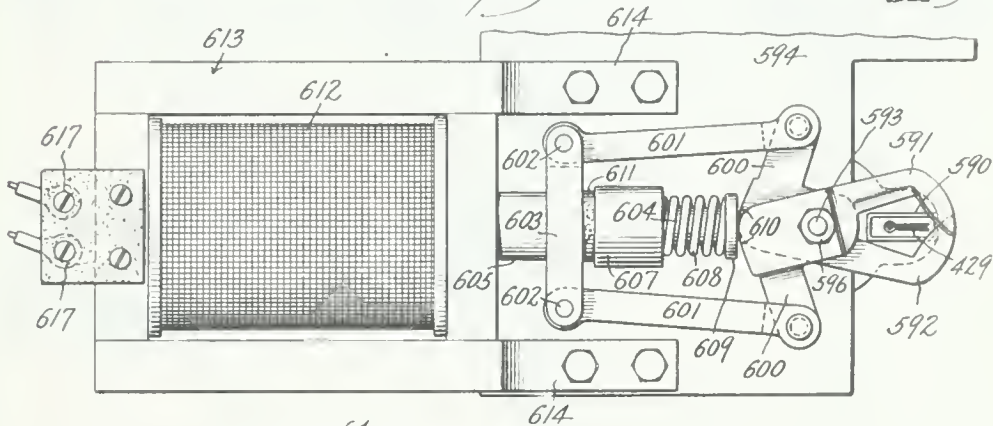
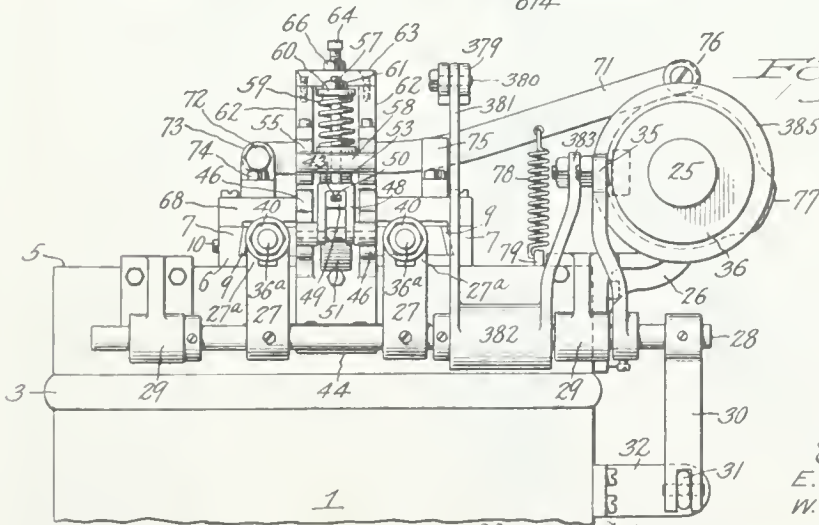


Fig. 5.



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Dec. 31, 1935.

E. H. BINNS ET AL

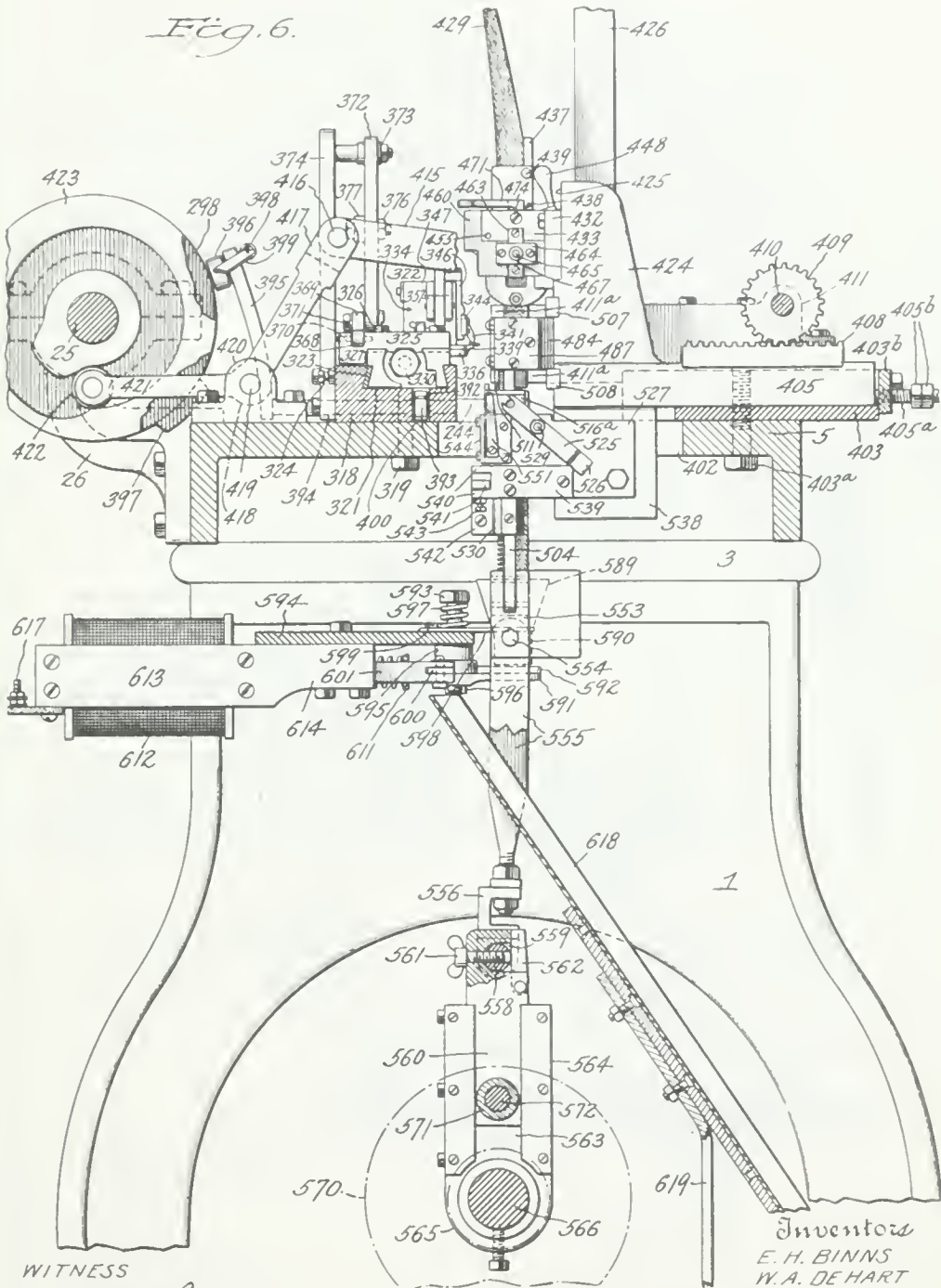
2,026,413

METHOD AND MACHINE FOR MAKING FLEXIBLE CLOSURES

Filed Nov. 21, 1930

27 Sheets-Sheet 6

Fig. 6.



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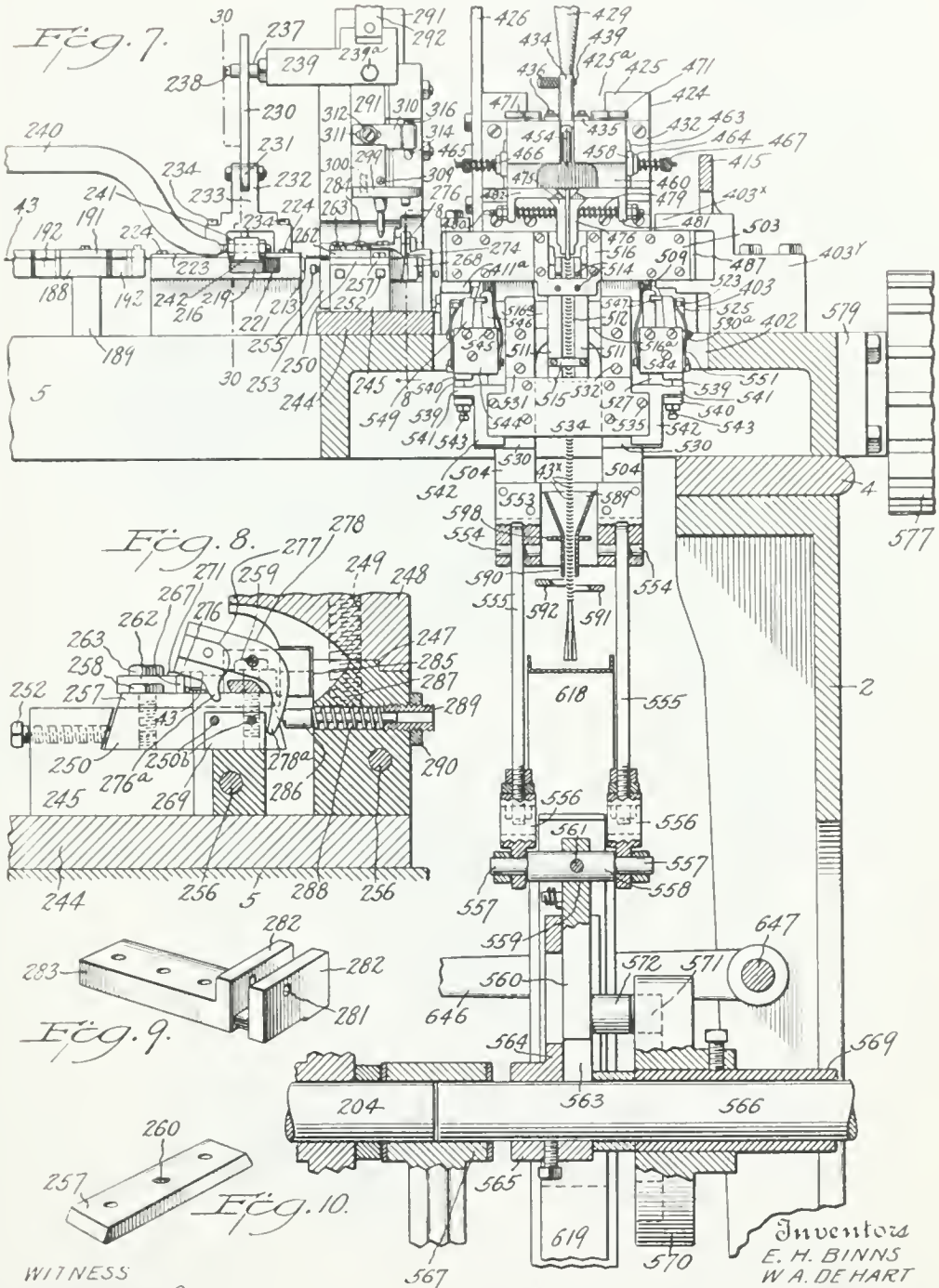
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METHOD AND MACHINE FOR MAKING FLEXIBLE CLOSURES

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27 Sheets-Sheet 7



WITNESS
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Smith Bros

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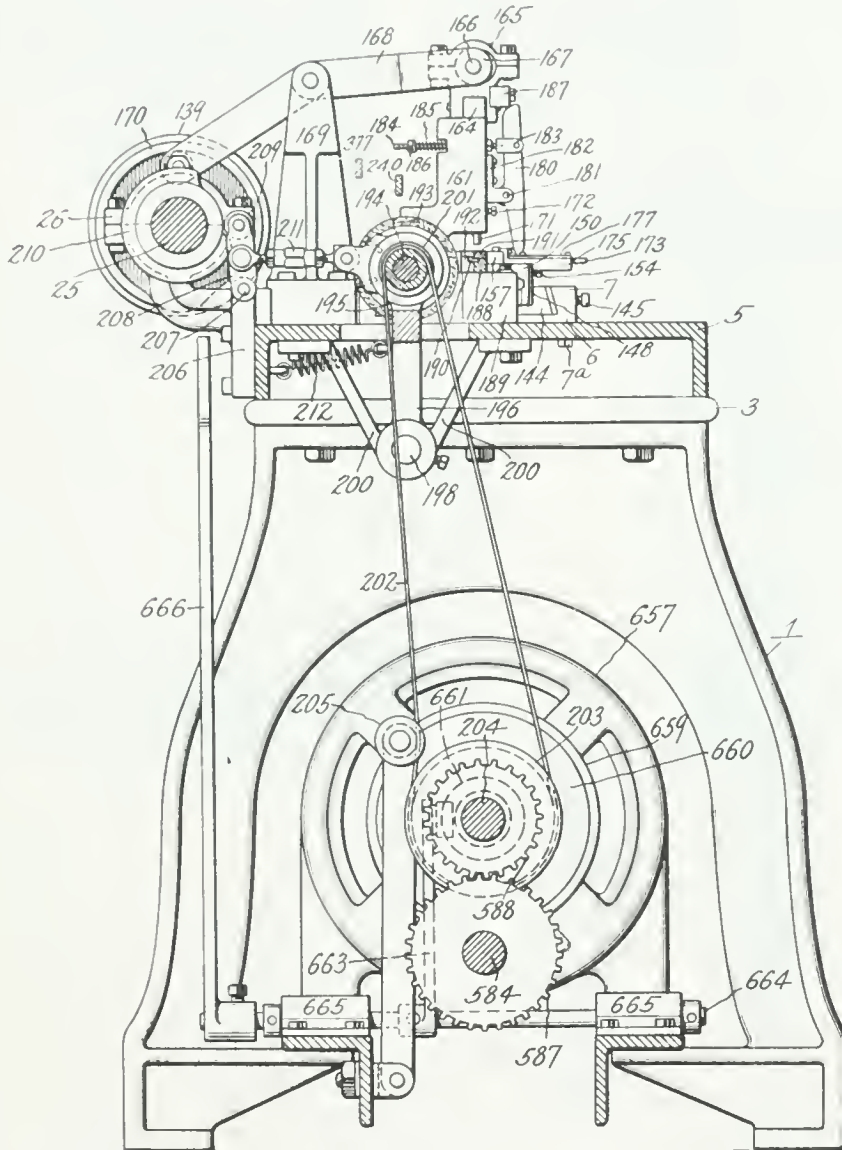


METHOD AND MACHINE FOR MAKING FLEXIBLE CLOSURES

Filed Nov. 21, 1930

27 Sheets-Sheet B

Fig. 11.



WITNESS

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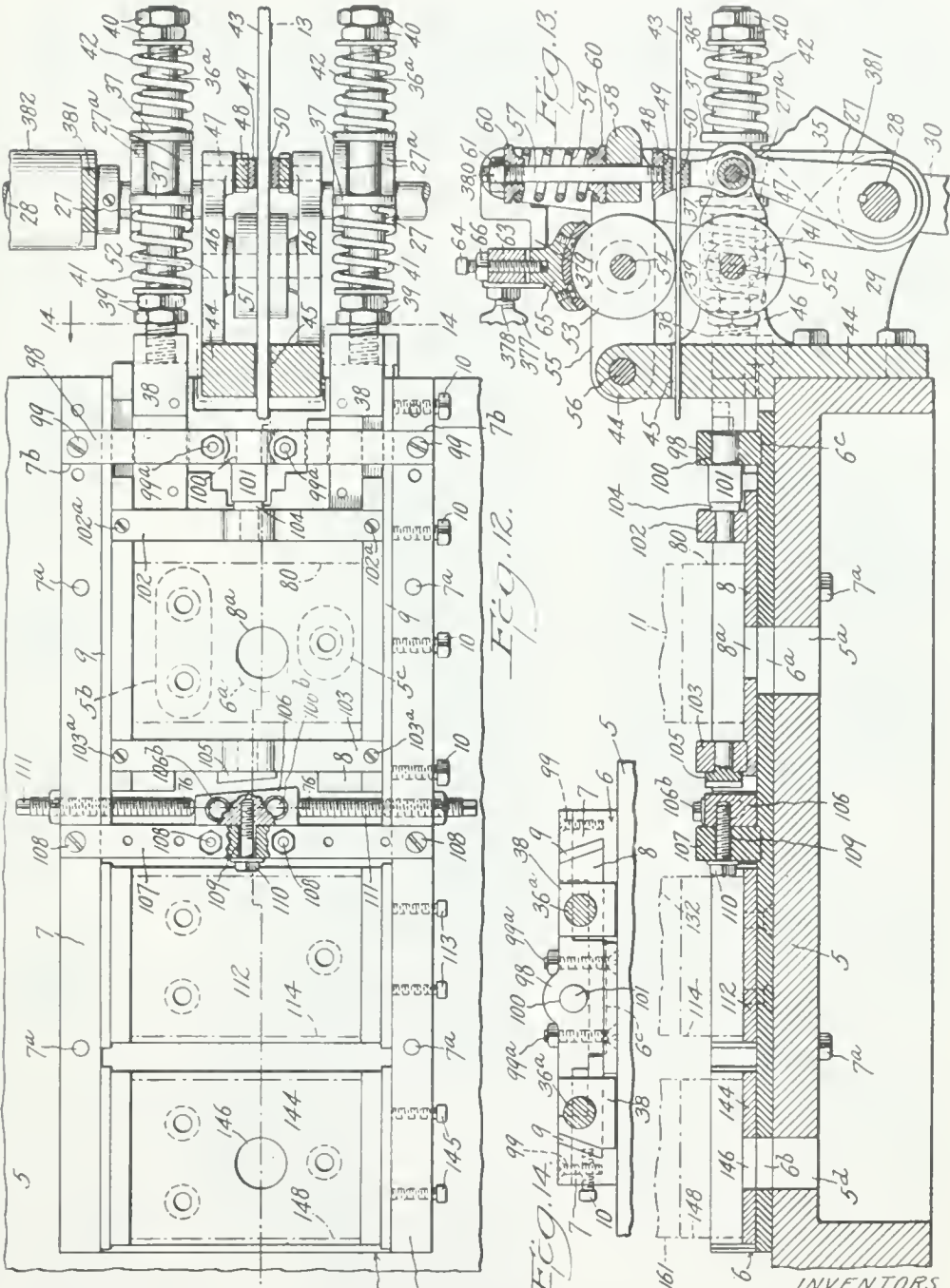
E. H. BINNS ET AL

2,026,413

METHOD AND MACHINE FOR MAKING FLEXIBLE CLOSURES

Filed Nov. 21, 1930

27 Sheets-Sheet 9



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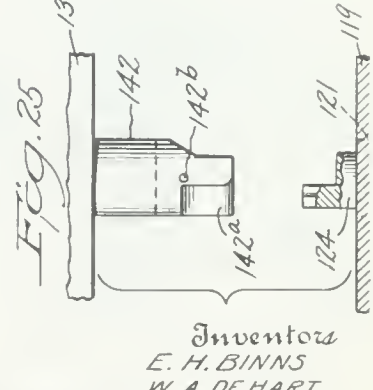
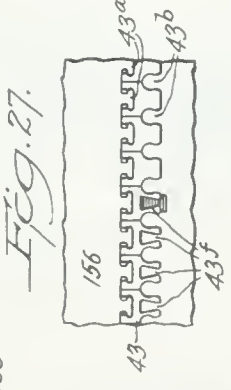
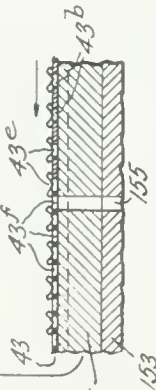
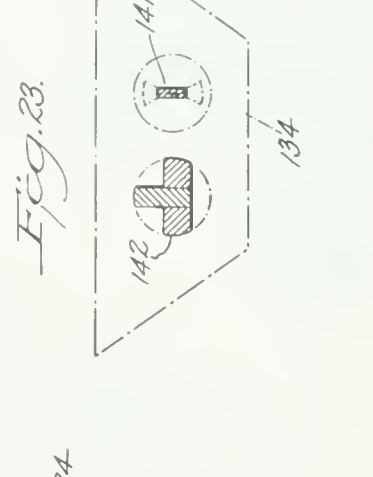
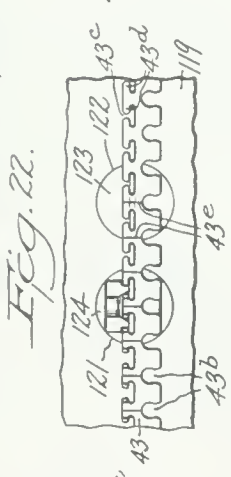
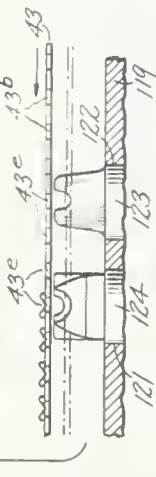
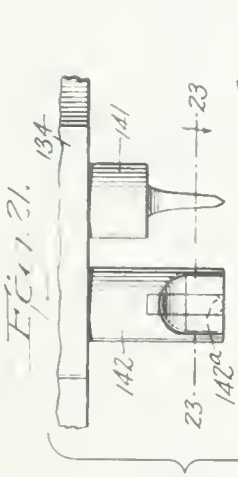
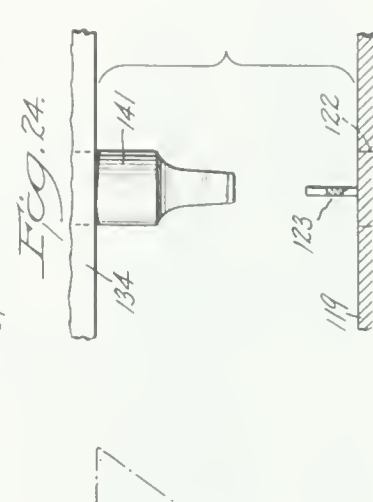
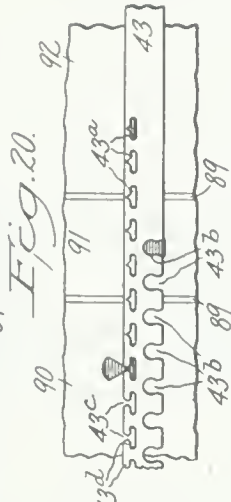
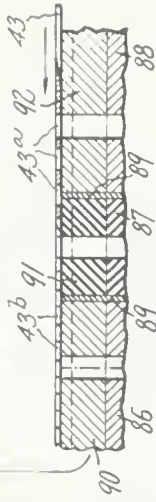
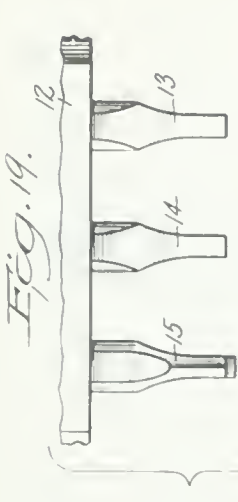
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METHOD AND MACHINE FOR MAKING FLEXIBLE CLOSURES

Filed Nov. 21, 1930

27 Sheets-Sheet 11



WITNESS
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METHOD AND MACHINE FOR MAKING FLEXIBLE CLOSURES

Filed Nov. 21, 1930

27 Sheets-Sheet 13

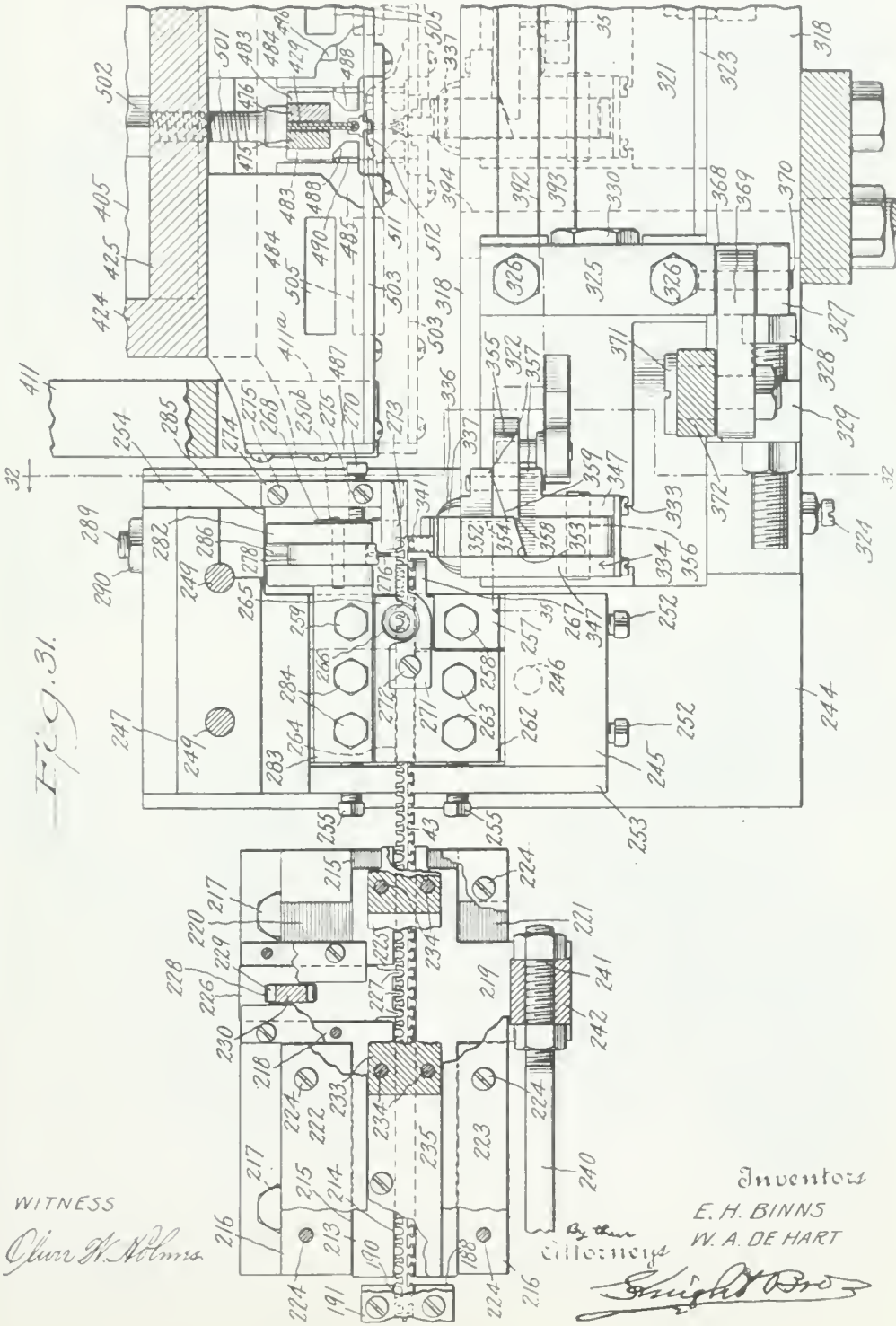


Fig. 31.

WITNESS

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METHOD AND MACHINE FOR MAKING FLEXIBLE CLOSURES

Filed Nov. 21, 1930

27 Sheets-Sheet 15

Fig. 35.

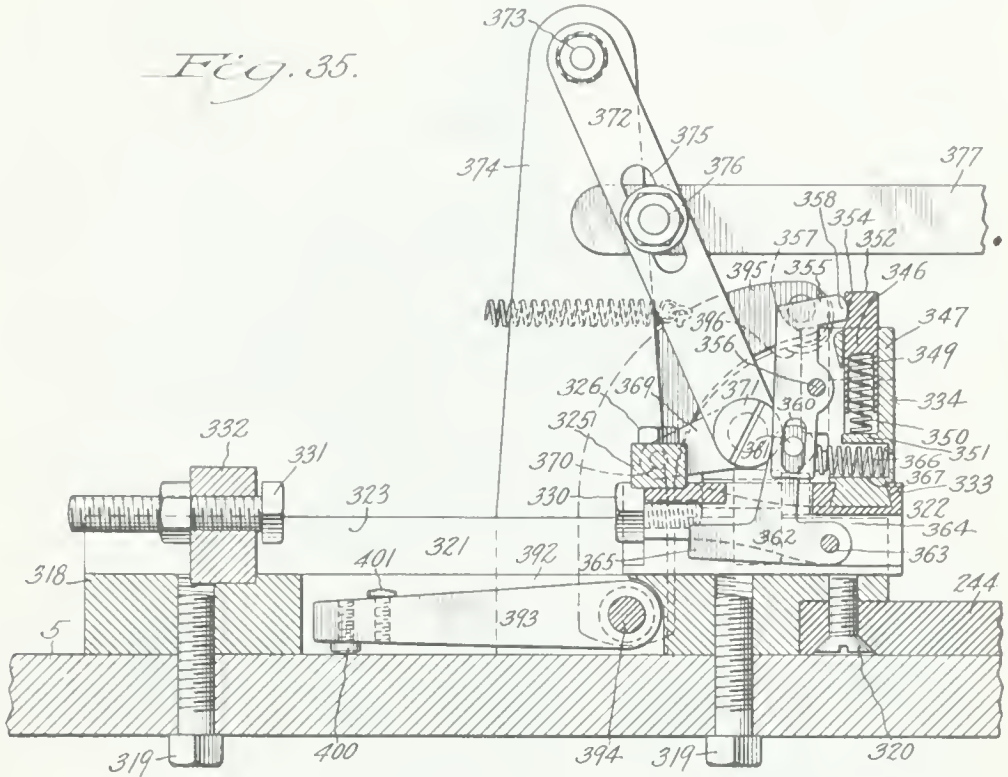


Fig. 36.

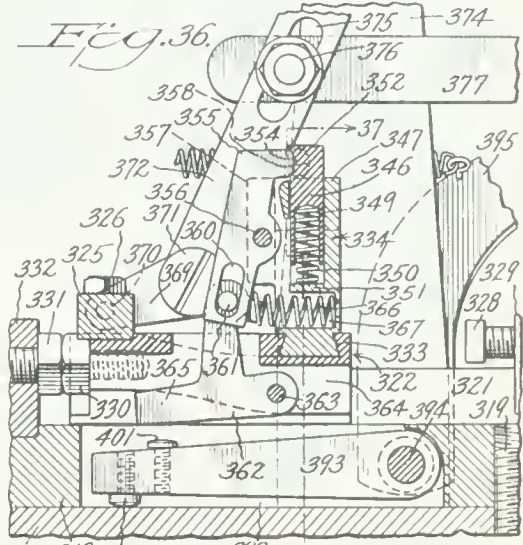
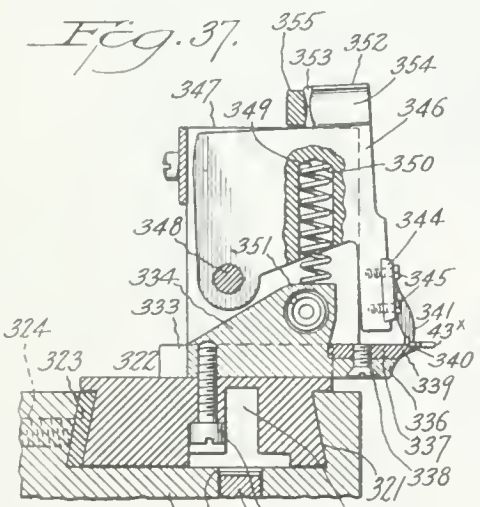


Fig. 37.



WITNESS

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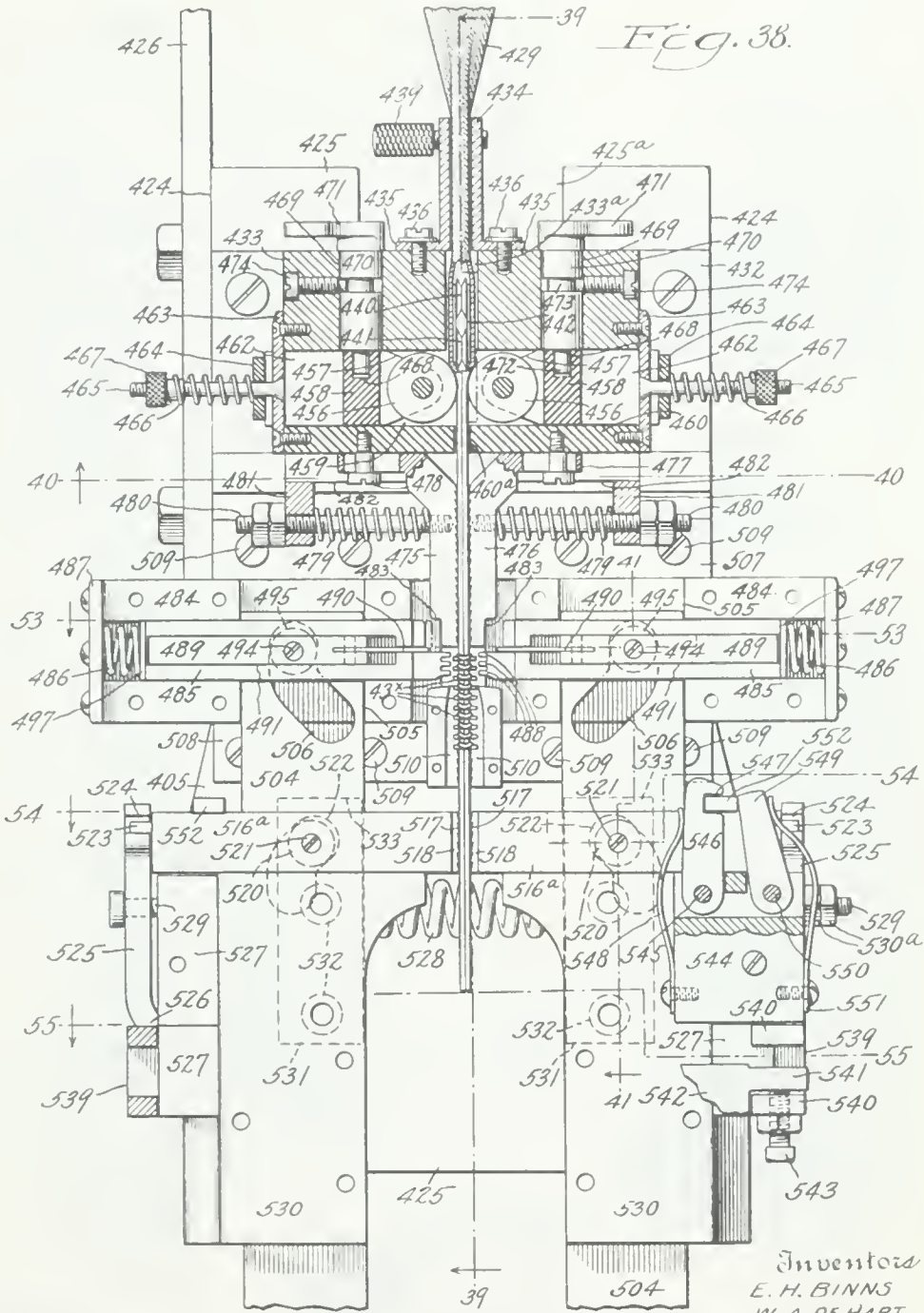
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27 Sheets-Sheet 16



Inventors
 E. H. BINNS
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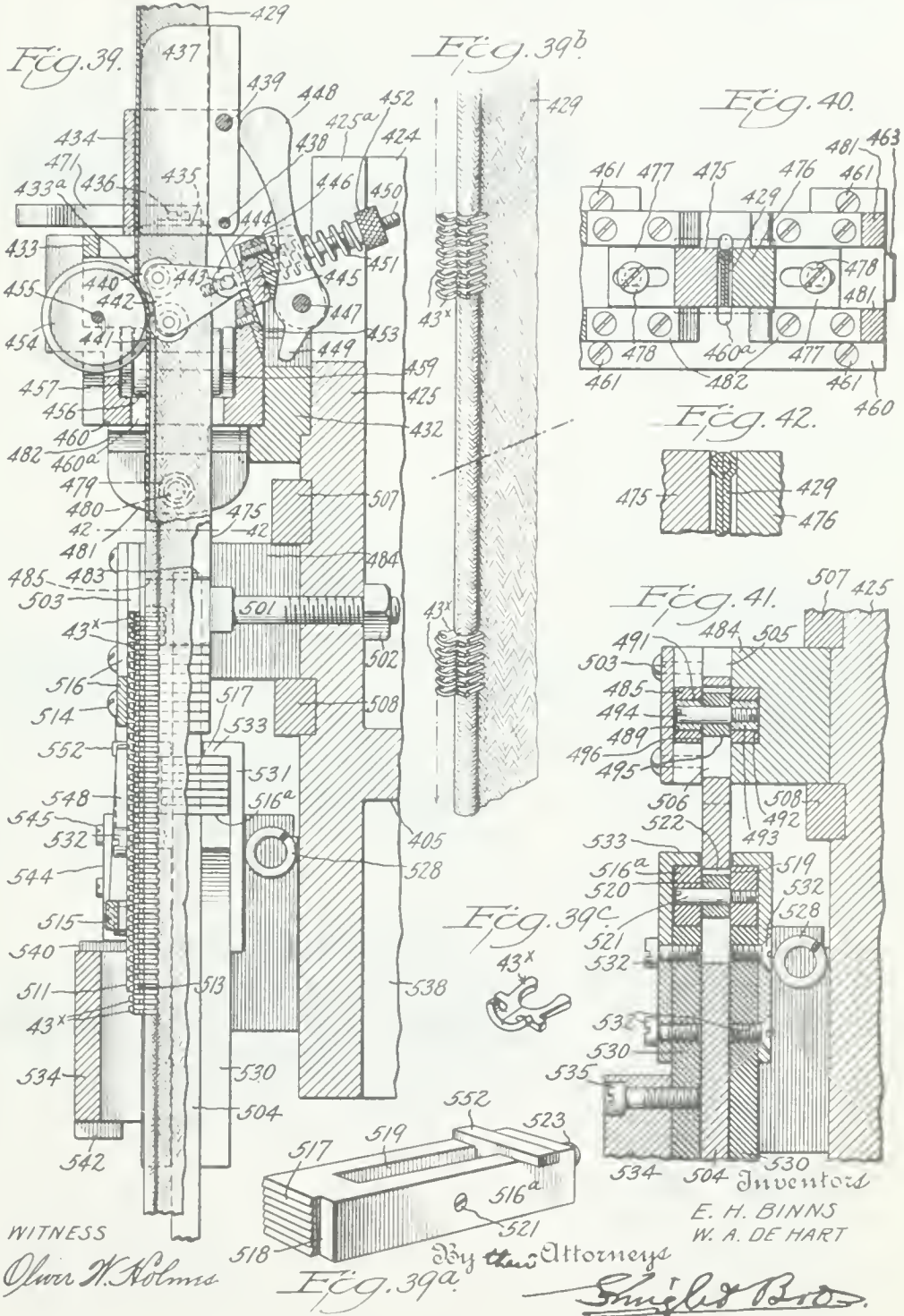
WITNESS
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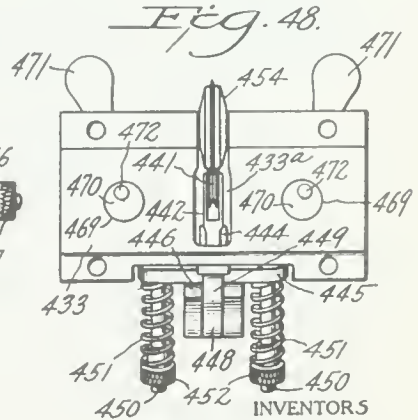
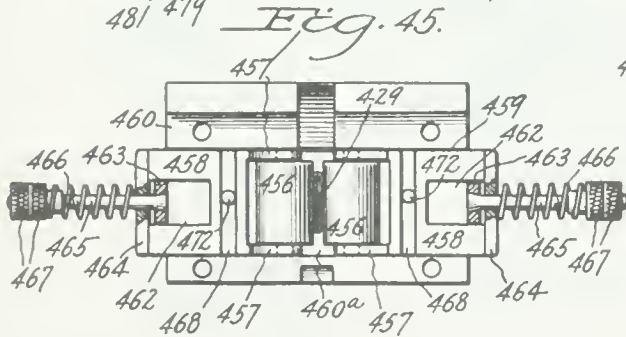
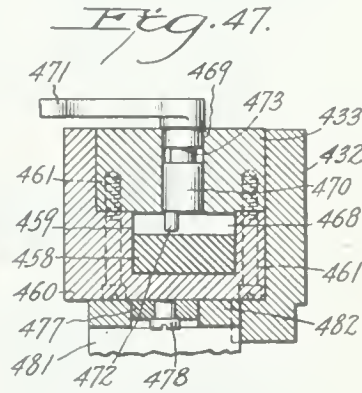
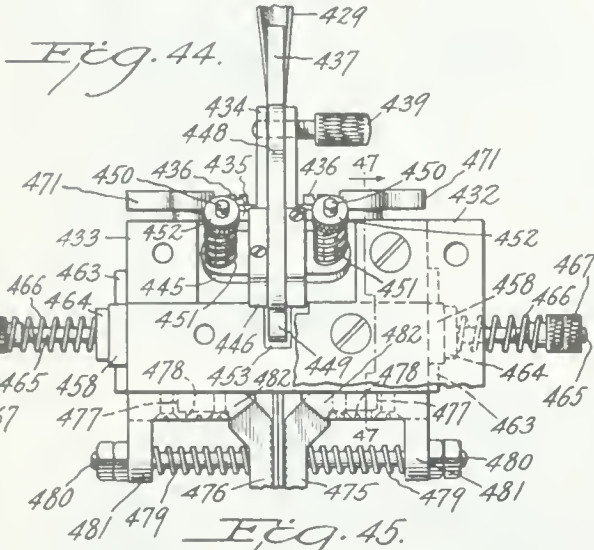
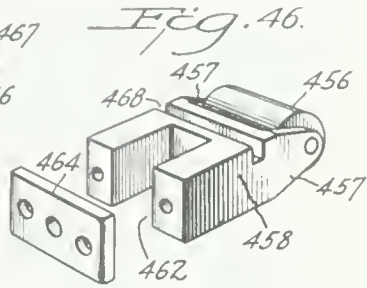
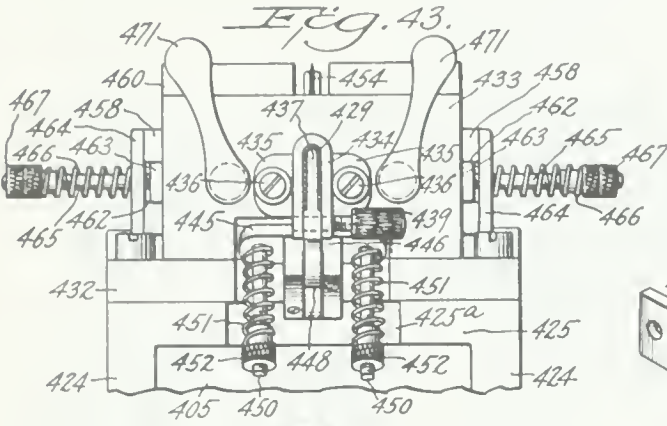
27 Sheets-Sheet 17



METHOD AND MACHINE FOR MAKING FLEXIBLE CLOSURES

Filed Nov. 21, 1930

27 Sheets-Sheet 18



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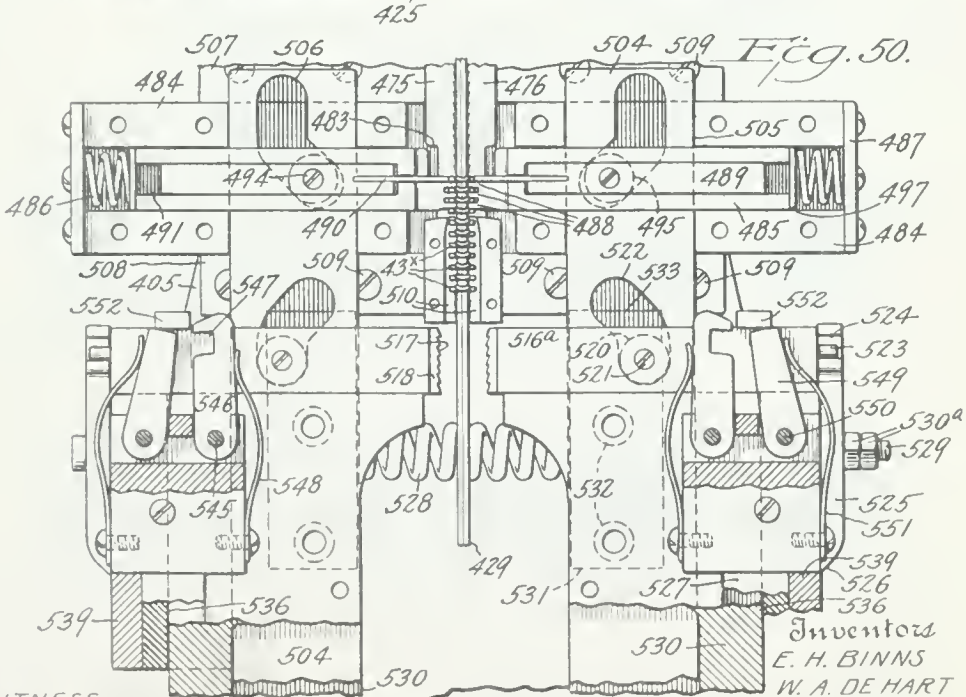
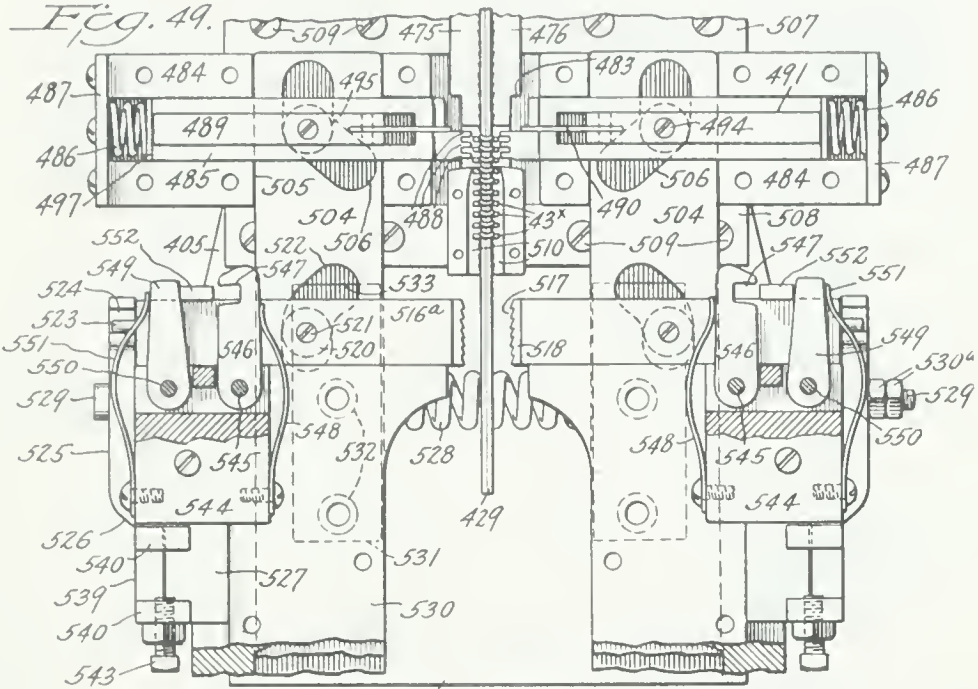
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METHOD AND MACHINE FOR MAKING FLEXIBLE CLOSURES

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27 Sheets-Sheet 19



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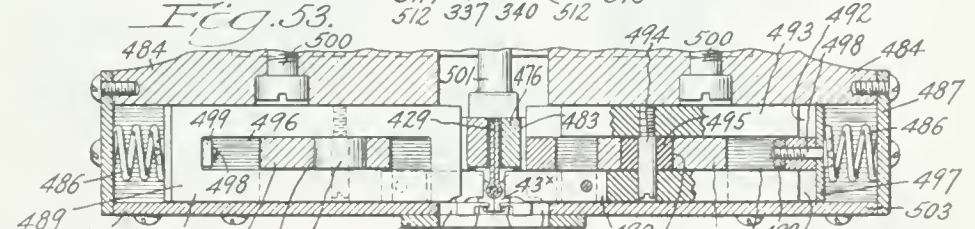
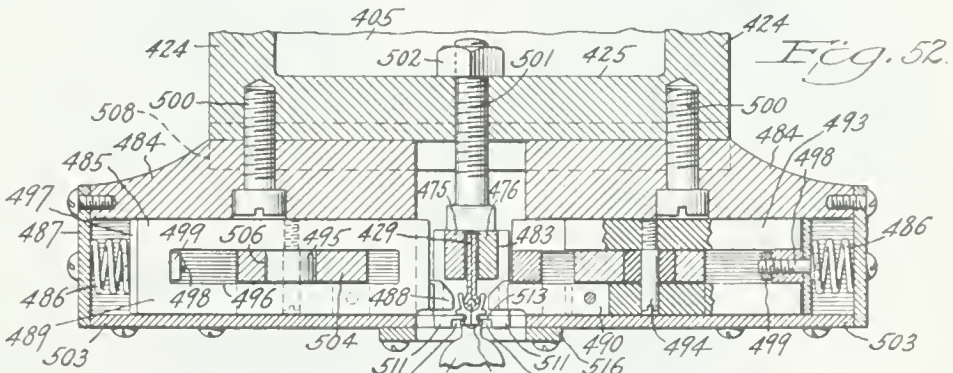
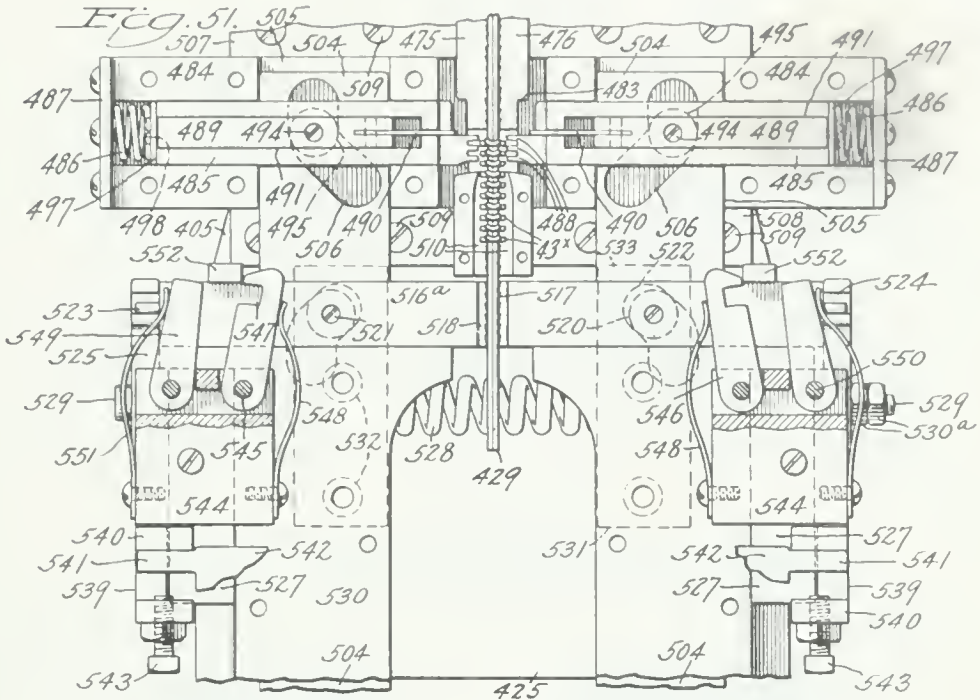
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METHOD AND MACHINE FOR MAKING FLEXIBLE CLOSURES

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27 Sheets-Sheet 20

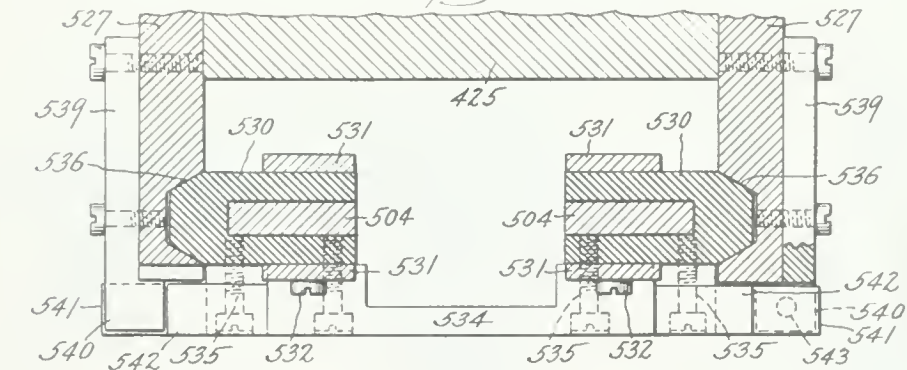
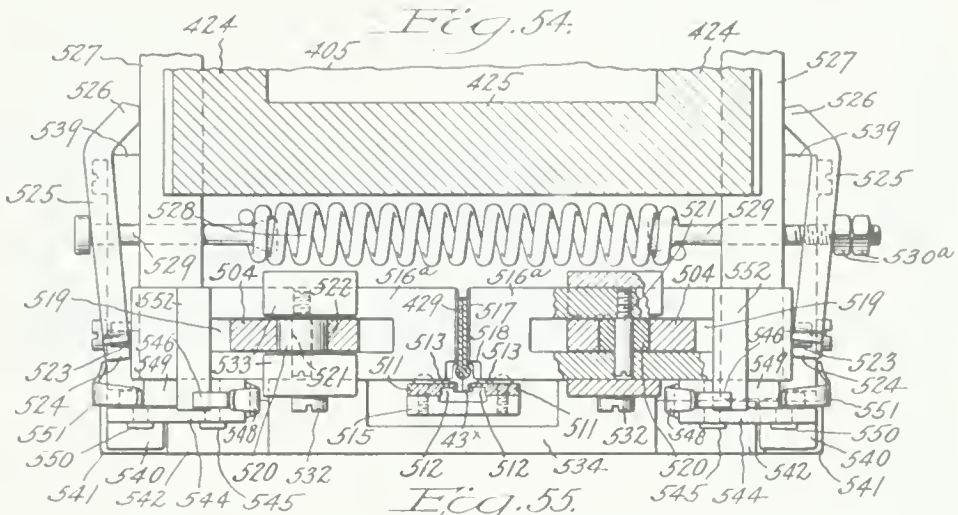


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METHOD AND MACHINE FOR MAKING FLEXIBLE CLOSURES

Filed Nov. 21, 1930

27 Sheets-Sheet 21



WITNESS

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Ernest B. Smith

METHOD AND MACHINE FOR MAKING FLEXIBLE CLOSURES

Filed Nov. 21, 1930

27 Sheets-Sheet 23

Fig. 61.

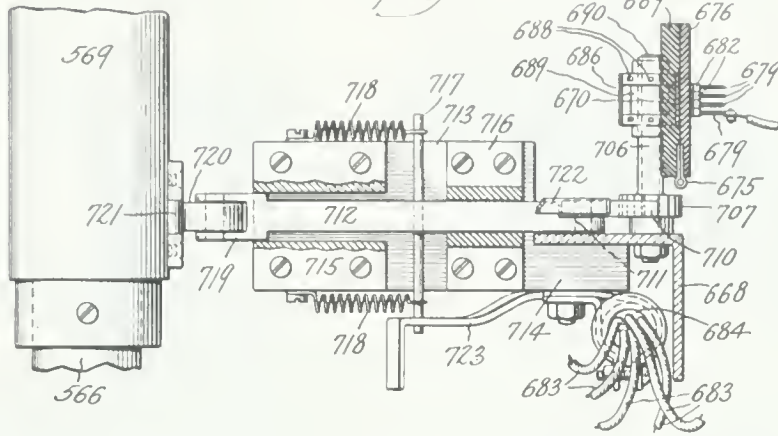


Fig. 62.

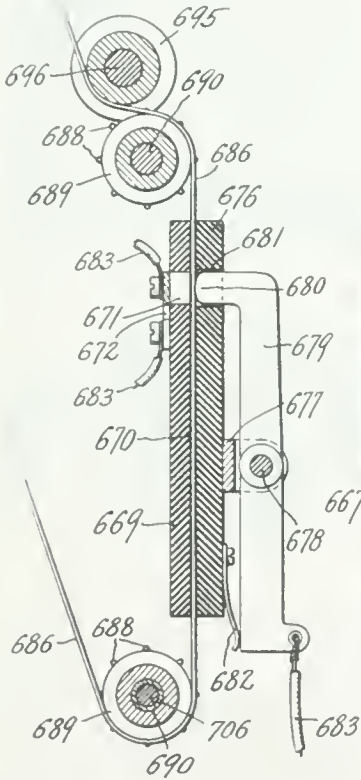


Fig. 63.

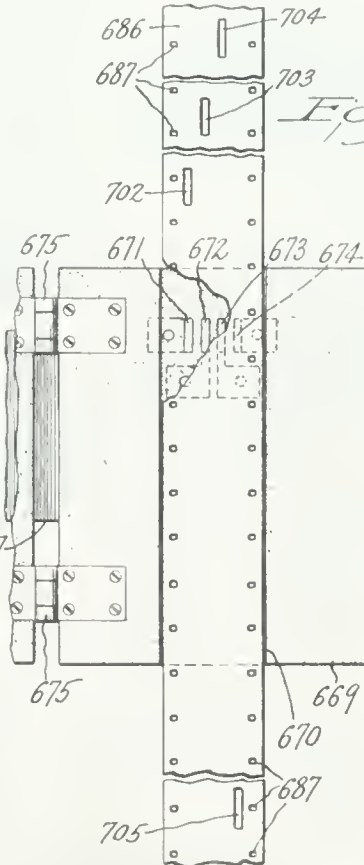
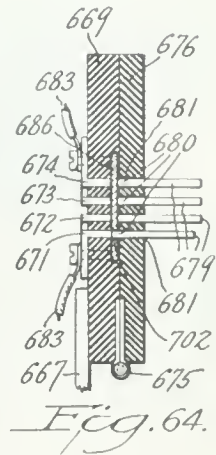


Fig. 64.



WITNESS

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METHOD AND MACHINE FOR MAKING FLEXIBLE CLOSURES

Filed Nov. 21, 1930

27 Sheets-Sheet 25

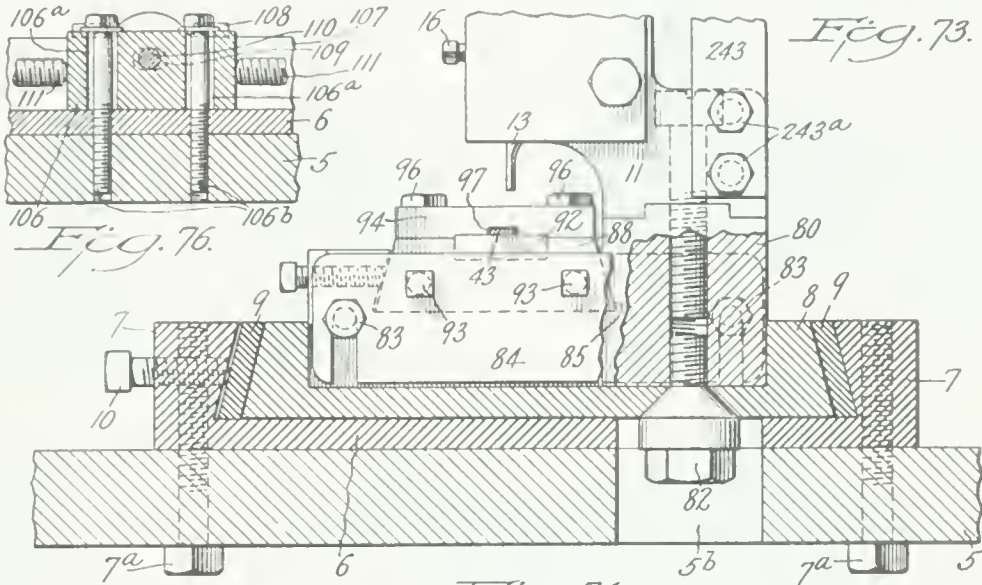
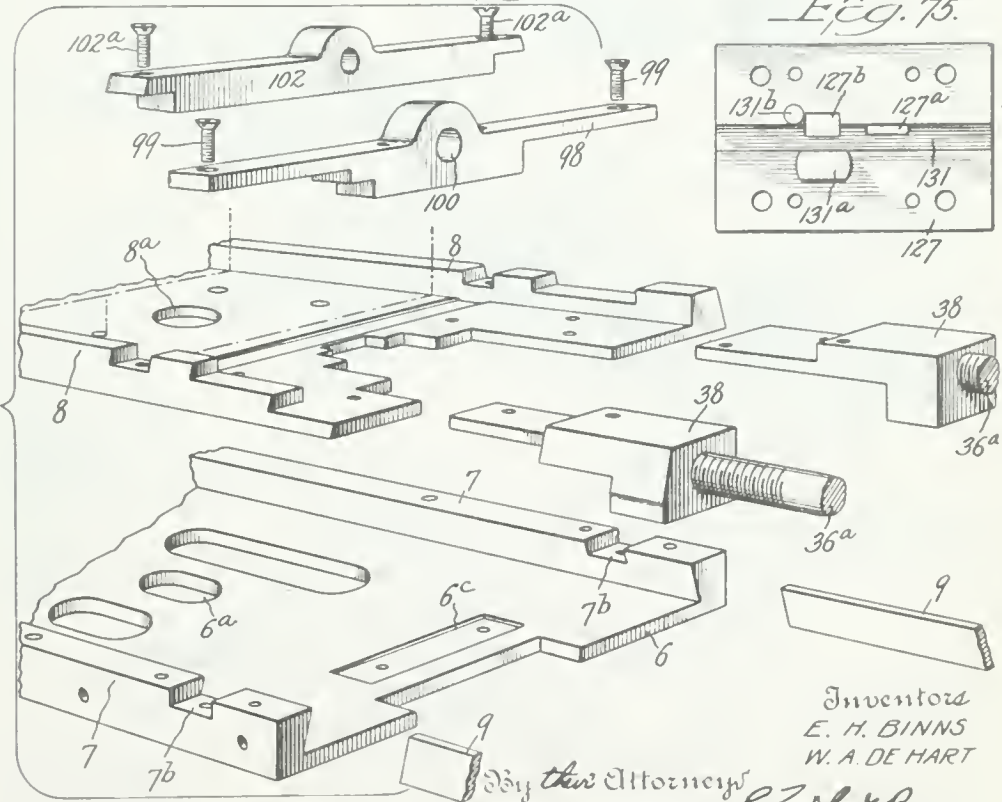


Fig. 73.

Fig. 76.

Fig. 74.

Fig. 75.



Inventors
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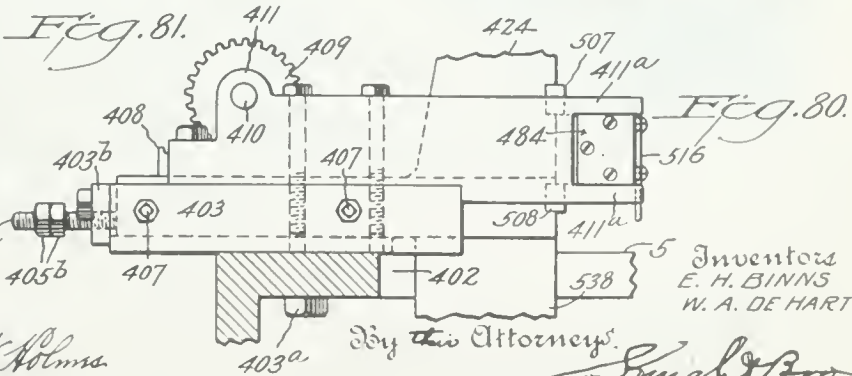
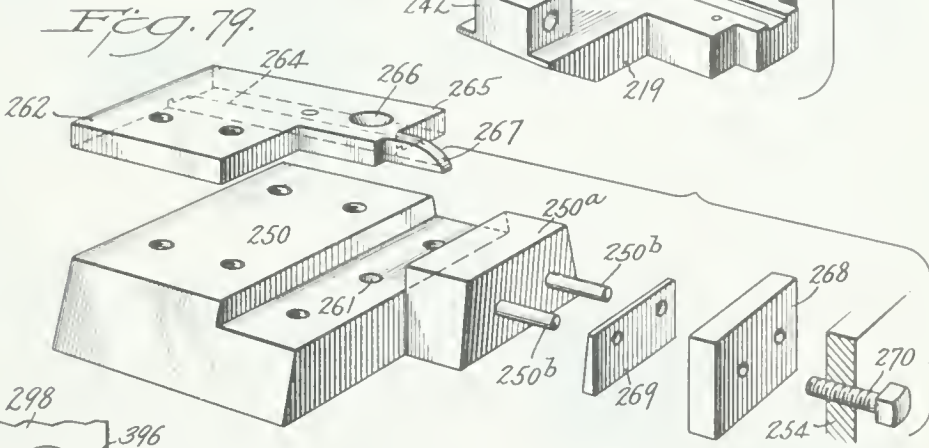
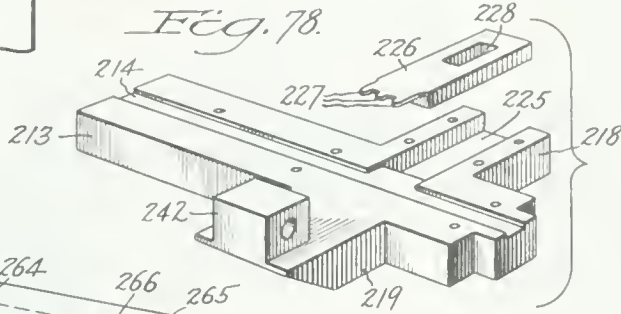
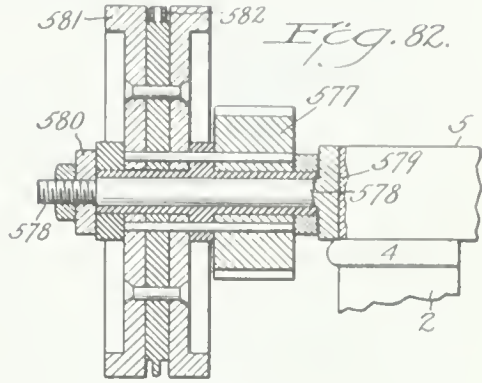
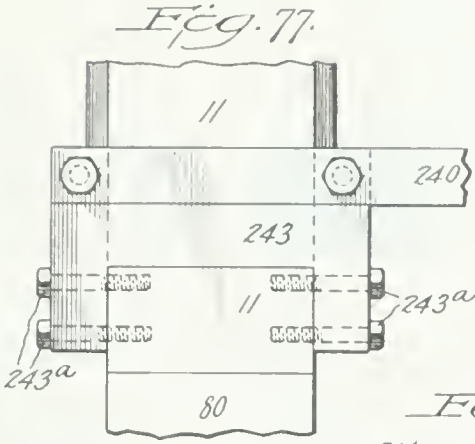
By their Attorneys
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METHOD AND MACHINE FOR MAKING FLEXIBLE CLOSURES

Filed Nov. 21, 1930

27 Sheets-Sheet 26



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Singh & Bro.

Dec. 31, 1935.

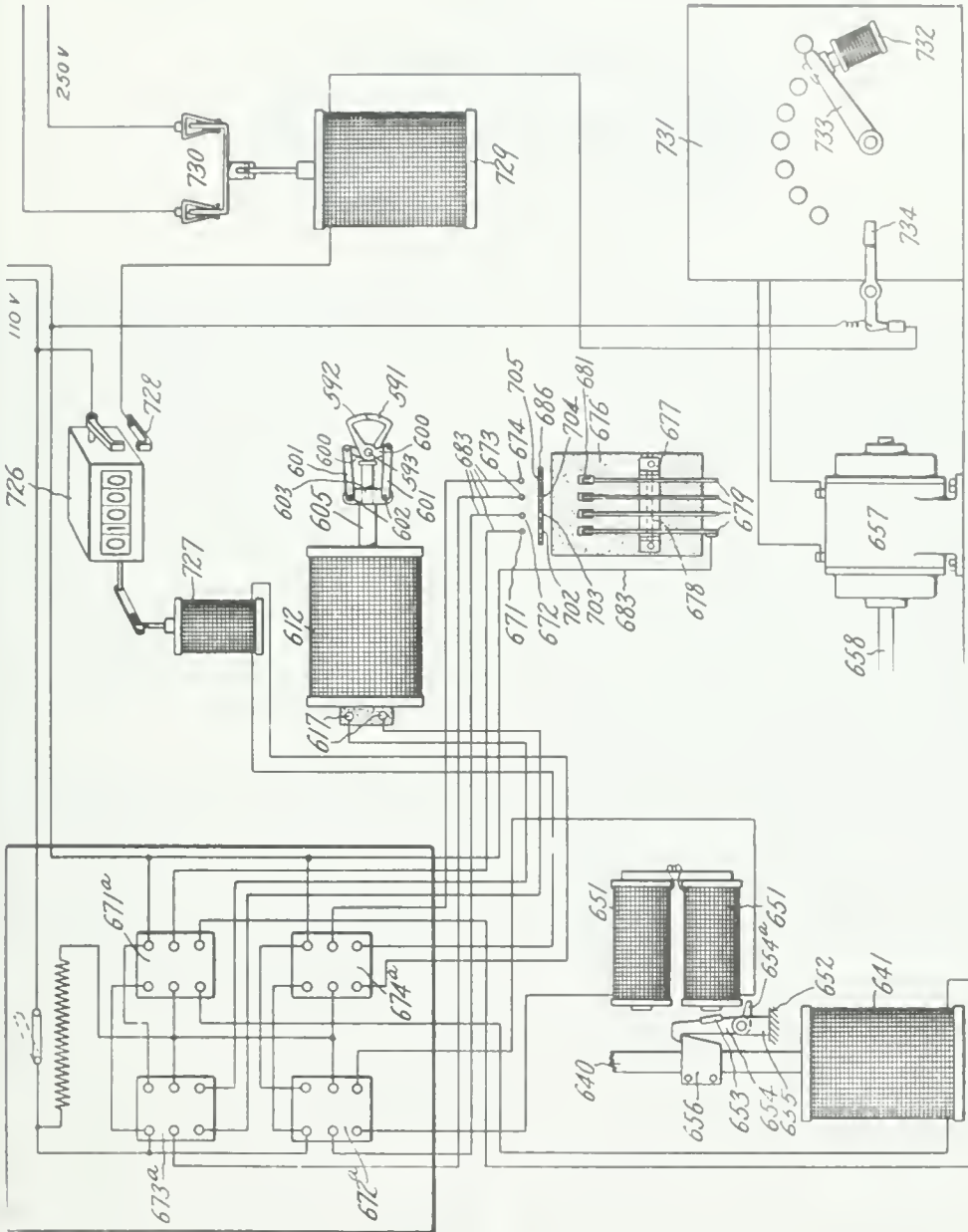
E. H. BINNS ET AL

2,026,413

METHOD AND MACHINE FOR MAKING FLEXIBLE CLOSURES

Filed Nov. 21, 1930

27 Sheets-Sheet 27



WITNESS

Oliver H. Holmes

FIG. 83.

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Smith Bros

UNITED STATES PATENT OFFICE

2,026,413

METHOD AND MACHINE FOR MAKING FLEXIBLE CLOSURES

Edward H. Binns, Pittsburgh, Pa., and William A. De Hart, Teaneck, N. J., assignors, by mesne assignments, to Hookless Fastener Company, Meadville, Pa., a corporation of Pennsylvania

Application November 21, 1930, Serial No. 497,174

103 Claims. (Cl. 153—1)

The present invention relates to improvements in automatic machinery and to improved methods for producing stringers of interlocking fastening devices for flexible closures of the type shown in Patents No. 1,553,499 of September 15, 1925, and No. 1,701,555 of February 12, 1929.

The improved machine comprises a plurality of punches for operating upon a blank strip of metal to form in successive stages the characteristic features of the individual interlocking fastening members, and tape forming and feeding mechanism acting upon a tape to fold it longitudinally into a two ply tape having a thickened rib or bead portion for the reception of the yoke ends of the fastening members that are clamped thereon. The folded form of the tape or stringer for the reception of the fastening members is an embodiment of the flexible closure structure covered by Patent No. 1,585,654 dated May 25, 1926.

These two sets of mechanisms,—the punch press mechanisms and the tape forming and feeding mechanisms,—are operated through a divided driving mechanism normally connected through an automatic control clutch so that both sets of mechanisms can be operated in unison for the continuous production of stringers or, by shifting the connecting clutch,—the production of fastening members may be discontinued while the tape forming and feeding mechanism is continued in operation to supply blank parts of the formed tape between groups of fastening members. In this way the separation of groups of members upon the tape is effected, the feed of the tape being a uniform step by step operation whether fastening devices are being made and mounted upon the tape, or blank spaces between groups of members are being produced.

This arrangement of the two sets or groups of mechanisms which can operate together or with the fastener producing group disconnected is an important feature of the present invention. The importance of this divided operation of the two groups of mechanisms is due partly to the provision of an automatic control which maintains the joint operation of the mechanisms for a proper period to produce stringers with a predetermined number of fastening devices and, at the completion of a group of said devices of the desired number or length of stringers, acts through suitable means to arrest the action of the mechanisms for forming fastening members while the formation and feed of the folded beaded tape is kept up at the uniform rate of speed,—and upon the feed of a sufficient length of blank

tape or stringer to again throw into action the fastener forming mechanisms to start a new group of fastening members.

Associated with the two sets of mechanisms referred to is a cut-off mechanism which is also actuated by the automatic control to cut the formed tape or stringer between groups of fastening members, to produce the desired length of stringers with the proper number of fastening members and extra blank ends of folded two ply tape.

The present invention includes, in addition to the above recited main features, improved constructions and arrangements of parts to insure accuracy and rapidity of operation of the machine in performing its work. The blank strip of metal is fed through the machine by a step by step motion induced through the operation of one of the punch presses which is mounted on a reciprocating bed and intermittently moved forward a step while the punches are in engagement with the strip and retracted to initial position while the punches are withdrawn,—the strip being held against rearward movement by suitable intermittently acting clamping means.

The improved fastener members are formed in a continuous strip or connected series by which they are fed and controlled until they are cut off as individual members. At the cut-off point each successive individual member is gripped rigidly by a carrier and conveyed to position for clamping it upon the beaded edge of the prepared folded carrier tape or stringer. The tape is drawn through the folding and forming devices by a step by step feeding mechanism mounted upon a reciprocating carriage by which the formed beaded edge of the folded tape is moved laterally into the forwardly presented open jaws of the finished fastening member supported firmly by the carrier gripper, clenching devices being thrown into action immediately thereafter for clamping the jaws of the fastener member upon the tape.

The improved machine is preferably automatic in its operation. The automatic controlling mechanism may be of any approved type but is preferably of the electrical type in which each important part of the mechanism is thrown into or out of action by the operation of an electro-magnet controlled through contact devices which are caused to function at the proper time by the mechanical operations that are controlled. The machine is driven by an electric motor receiving current through a rheostat or starting device and main supply switch as is

usual; the rheostat lever being preferably under the control of a counting device of suitable construction, which, upon the completion of a count of the desired number of complete stringers produced by the machine, will actuate the rheostat lever for throwing out the motor and stopping the machine. The automatic clutch which connects the divided driving mechanisms operating the presses for producing fastener-members and the stringer forming and feeding mechanism is preferably controlled by two electromagnets, one of which releases the clutch for connecting up the divided drive mechanism while the other holds the clutch-operating devices in clutch released position until the clutch is to be thrown out to permit the stringer forming and feeding mechanism to operate alone. A third electromagnet controls the cutoff shears that sever the tape between groups of fastener members.

These several electrical controls are preferably in circuit with a group of contacts normally separated by an endless band of insulating material which is fed in a step-by-step manner one step for each revolution of the machine, said band having perforations formed in it at proper intervals to permit contact through the desired set of contact devices to operate the controlling magnets at the proper times to produce the desired results.

A still further object is to provide an improved method for forming separable fastener members wherein said members are substantially formed while connected together in a strip of metal.

In order that the invention may be fully understood it will first be described with reference to the accompanying drawings and the novelty thereafter more particularly pointed out in the annexed claims.

In said drawings:—

Figure 1 is a front elevation of the improved machine for producing stringers for flexible closures;

Figure 1a is a detail sectional view, taken on the line 1a—1a of Figure 1, showing the chip removing brush;

Figures 2 and 2a represent, taken together, a plan view of the said machine, Figure 2 representing the right hand portion of the machine, while Figure 2a represents the left hand portion of the same;

Figure 2b is a detail sectional view taken on the line 2b—2b of Figure 2;

Figure 3 is a left end elevation of the improved machine;

Figure 4 is a rear elevation of the left hand end of the machine;

Figure 5 (Sheet 21) is a partial end elevation of the right hand end of the improved machine;

Figure 6 is a vertical transverse sectional view taken on the line 6—6 of Figure 1;

Figure 7 is a partial vertical central longitudinal sectional view of the machine;

Figure 8 is a detail sectional view taken on line 8—8 of Figure 7 showing the cut-off device for severing individual fastener-members from the strip;

Figures 9 and 10 are detail perspective views of parts of said cut-off mechanism;

Figure 11 is a vertical transverse sectional view of the machine taken on the line 11—11 of Figure 1 and showing particularly the buffing mechanism;

Figure 12 is a detail sectional plan view illustrating the bed-plates of the first three punch

presses and the operating mechanism for the reciprocating bed of the first punch press;

Figure 13 is a detail vertical longitudinal sectional view taken on the line 13—13 of Figure 12;

Figure 14 is a detail vertical transverse sectional view taken on the line 14—14 of Figure 12;

Figure 15 is an enlarged detail vertical longitudinal sectional view showing the first three punch presses;

Figure 16 is a detail plan view of the bed portion of press No. 1, part of the punch guiding and stripping plate being broken away to show the work;

Figure 17 is a view similar to Figure 16 showing the bed portion of press No. 2;

Figure 18 is a view similar to Figures 16 and 17 showing the bed portion of press No. 3;

Figure 19 is a detail vertical longitudinal sectional view of parts of press No. 1 indicating the relation of the punches to the metal blank strip extending over the bed-plate;

Figure 20 is a detail plan view of the blank strip upon the bed-plate of press No. 1 showing the three punches in cross-section in the blank strip;

Figure 21 is a detail vertical longitudinal sectional view of parts of press No. 2 illustrating the action of the male and female dies upon the metal blank strip;

Figure 22 is a detail plan view of the female die members of Figure 21 beneath the blank strip;

Figure 23 is a horizontal sectional view taken on the line 23—23 of Figure 21;

Figure 24 is a detail vertical transverse sectional view illustrating one pair of male and female dies of press No. 2 as shown in Figure 21;

Figure 25 is a detail sectional elevation of the other pair of male and female dies of press No. 2, shown in Figure 21;

Figure 26 is a detail vertical longitudinal sectional view illustrating parts of press No. 3 and the connected series of fastener members upon which the punch of press No. 3 imparts the final work;

Figure 27 is a detail plan view of the work upon the bed-plate of press No. 3, showing the final punch in cross-section in the work;

Figure 28 is an enlarged detail vertical transverse sectional view taken on the line 28—28 of Figure 1 and showing press No. 3;

Figure 29 is a detail perspective view of the pilot or gauge plate of press No. 3;

Figure 30 is a vertical transverse sectional view taken on the line 30—30 of Figure 7 showing parts of the auxiliary feed and press No. 4 by which the auxiliary feed is operated;

Figure 31 is a plan view, partly broken away, of the mechanism shown in Figure 7;

Figure 32 is a vertical transverse sectional view taken on the line 32—32 of Figure 31;

Figure 32a is an enlarged detail transverse sectional view of the cutoff knife for cutting off fastener members;

Figure 33 is a view similar to the main part of Figure 32 showing the closed position of the operative parts;

Figure 34 is a detail front elevation of the carrier for cutoff fastener members;

Figures 34a and 34b are enlarged detail sectional views of the gripper which grips the fastener members;

Figure 35 is a vertical sectional view taken on the line 35—35 of Figure 31;

Figure 36 is a view similar to Figure 35 showing the main parts in shifted position;

Figure 37 is a detail sectional view taken on the line 37—37 of Figure 38;

Figure 38 is a rear face view of the tape forming, feed and associated devices, part being removed and part being shown in section;

Figure 39 is a vertical sectional view taken on the line 39—39 of Figure 38;

Figure 39a is a detail perspective view of one of the tape-feeding gripper bars;

Figure 39b is a perspective view of a section of folded tape indicating two spaced groups of fastener members;

Figure 39c is an enlarged perspective view of a single detached fastener member;

Figure 40 is a detail transverse sectional view taken on line 40—40 of Figure 38;

Figure 41 is a detail vertical sectional view taken on the line 41—41 of Figure 38;

Figure 42 is a detail sectional view taken on the line 42—42 of Figure 39;

Figure 43 is a detail plan view of the upper portion of the tape folding and forming device;

Figure 44 is a rear view of the same;

Figure 45 is a plan view, partly broken away, of the spring actuated tape pressing rolls, the device being detached from the rest of the mechanism for the purpose of clearly illustrating it;

Figure 46 is a perspective view of one of said tape pressing rollers and its supporting carrier;

Figure 47 is a sectional view taken on the line 47—47 of Figure 44;

Figure 48 is an underneath plan view of the tape folding and forming mechanism in the plane of separation from the tape pressing rollers illustrated in Figure 45;

Figures 49, 50, and 51 are detail views in rear elevation showing the clencher and member spacing devices and tape-feeding devices, the parts being shown in progressive positions in the several views to illustrate the operation of said devices;

Figures 52 and 53 are horizontal sectional views taken on the line 53—53 of Figure 38 and showing two positions of the mechanism for clamping the fastener members upon the beaded edge of the folded tape;

Figure 54 is a sectional view taken on the line 54—54 of Figure 38;

Figure 55 is a detail sectional view taken on the line 55—55 of Figure 38;

Figure 56 is a detail sectional view taken on the line 56—56 of Figure 2a;

Figures 57 and 58 are respectively a vertical sectional view and a bottom plan view of the automatically controlled tape cut-off mechanism;

Figure 59 is a transverse vertical sectional view of the automatic control mechanism;

Figure 60 is a detail front elevation of the main parts of the same mechanism;

Figure 61 is a sectional view taken on the line 61—61 of Figure 59;

Figure 62 is a vertical sectional view taken on the line 62—62 of Figure 60;

Figure 63 is a detail fragmentary view illustrating the circuit controlling band of the automatic controlling mechanism;

Figure 64 is a detail sectional view taken on the line 64—64 of Figure 59;

Figure 65 is a vertical longitudinal sectional view through press No. 4 showing the strip-gauging pilot to the member cutoff and the carrier gripper;

Figure 66 is a transverse sectional view taken on the line 66—66 of Figure 17;

Figure 67 is a detail sectional view taken on the line 67—67 of Figures 17 and 68;

Figure 68 is a detail horizontal sectional view illustrating the automatic controlling clutch dividing the driving mechanisms for the punch presses and tape folding and feeding mechanism;

Figure 69 is a detail face view of said controlling clutch;

Figure 70 is a detail plan view of said clutch;

Figures 71 and 72 are detail perspective views of the mechanism for clamping fastener-members upon the beaded edge of the folded tape and for gauging the spacing between successive fastener-members upon said tape;

Figure 73 is a detail vertical transverse sectional view taken on the line 73—73 of Figures 2 and 15;

Figure 74 is a view in perspective of disassembled parts of the bed-plate and reciprocating bed of press No. 1;

Figure 75 is a detail plan view of the stripper plate of press No. 2;

Figure 76 is a detail vertical transverse sectional view taken on the line 76—76 of Figure 12;

Figure 77 is a detail rear view of part of press No. 1 showing the connection of operating bar extending to the auxiliary feed;

Figure 78 is a detail perspective view of the reciprocating slide of the auxiliary feed;

Figure 79 is a detail enlarged perspective view of disassembled parts of press No. 4;

Figure 80 is a detail side view of an auxiliary fixed arm of the supporting frame for the reciprocating tape-former;

Figure 81 is a detail face view of the cam for operating the gripper trip of the fastener-member carrier;

Figure 82 is a detail vertical sectional view taken on the line 82—82 of Figure 2a;

Figure 83 is a diagrammatic view illustrating the electrical control of the improved machine;

In specifically describing the improved machine the mechanisms will be referred to in their natural order, starting with the punch and die mechanisms which act successively upon an intermittently fed continuous metal strip-blank to form individual interlocking closure members; the first punch press being reciprocable to also act as the main step-by-step feed for the metal strip-blank; then the mechanism for severing completely forming individual closure fastener-members from the continuous metal strip; the carrier mechanism for taking successive severed members from the cutoff mechanism and moving them to a point where they are clamped upon the beaded flexible tape or stringer; the mechanism for longitudinally folding a tape and forming it with a beaded edge and feeding the beaded folded tape and presenting it intermittently in step-by-step movements within the open jaws of fastening closure members which are clamped upon its beaded edge; means associated with the tape-forming and feeding mechanism for spacing successive closure members and for clamping them upon the beaded edge of the folded tape; power mechanism acting through an automatic clutch which divides the power between the camshaft which operates the punch and die and other mechanisms acting upon the metal strip-blank and closure members formed therefrom, and the tape-forming, feeding and member-clamping mechanisms, said divided feed being so arranged and controlled that all of the mecha-

nisms can be caused to operate in proper unison and sequence to form closure members and clamp them upon the folded tape, or the formation of closure members may be arrested while the tape-forming and feeding mechanisms continue in operation to produce blank parts of the formed tape between groups of attached closure members; automatically controlled cutoff mechanism for severing the folded tape or stringer between groups of closure members; and finally automatic controlling mechanism by which the machine is caused to produce flexible closure stringers with the desired number of closure members and blank ends of tapes or stringers.

There are many detail devices forming parts of, or associated with, the general mechanisms referred to, all of which will be specifically described in their proper relationship with reference to the grouping of mechanisms and the accompanying drawings.

The machine embodying the present invention may be mounted upon any suitable framework. In the embodiment illustrated in the accompanying drawings the machine is mounted upon a heavy framework comprising the two end-frames or standards 1 and 2 having upon their upper ends the solid cross-bars or girders 3, 4 upon which is rigidly mounted a heavy steel table or platform 5. The table 5 is preferably of solid steel having integral downwardly presented strengthening flanges upon its sides and ends. This rigid framework is suitably braced by the shafts, supporting brackets and other rigidly attached parts hereinafter specifically referred to so that the machine parts will be substantially supported in their operative relation.

Punch and die forming and feeding mechanisms of press No. 1

The metal closure members are formed from a metal strip-blank by the successive action of punches and dies mounted in a series of three presses arranged upon the table or platform 5 at the right-hand or leading-in end of the machine shown in Figures 1, 2 and 5 of the drawings.

A heavy shallow steel tray 6 open at its ends and having heavy upstanding side flanges 7, is rigidly secured to the right-hand end of the table or platform 5 in the central longitudinal plane thereof, by means of heavy bolts 7a which are inserted from beneath the table or platform 5 and threaded into the tray 6 and its flanges 7 as best shown in Figure 73 on Sheet 25 of the drawings. This tray 6 affords a supporting bed for the three presses presently to be described, press No. 1 of which has imparted to it a short to and fro motion and, when the metal blank is engaged by its punches, constitutes the main feed mechanism for passing the metal strip blank in a step-by-step motion through the machine.

Press No. 1 (best shown in Figures 1, 2, 5, 12, 13, 14, 15, 73, and 74 of the drawings), has a rectangular bed-plate 8 sliding upon the base tray 6 between the undercut inner faces of flanges 7, the side edges of the bed-plate 8 being bevelled and shims 9 being mounted between the bevelled edges of bed-plate 8 and the side flanges 7. Set screws 10 are threaded through the front flange 7 and engage one of the shims 9 to accurately confine the bed-plate 8 of the press in position and at the same time allow freedom of motion for its reciprocation. The press standard 11 extends upwardly from the press block 80 mounted upon the bed-plate 8 upon which it is firmly supported, as hereinafter more fully described.

This standard 11 of press No. 1 carries a vertically reciprocating plunger 12 in the lower end of which are secured the three punch members 13, 14, and 15, said punch members being removably secured in the plunger 12 by means of set screws 16. The reciprocating plunger 12 carries at its upper end a slotted yoke 17 embracing an anti-friction roller 18 carried by pin 19 supported in the bifurcated end 20 of the press operating lever 21 which is pivoted upon the bracket 22 secured to the table 5 and engaged at its rear end 23 by a cam 24 mounted upon the main cam-shaft 25 extending from end to end along the rear edge of the table or platform 5, said cam-shaft being suitably supported and journalled in bracket-bearings 26 secured to the table or platform 5. In this operative connection between the cam 24 and reciprocating plunger 12 of press No. 1 it will be understood that the arms of the bifurcated end 20 of lever 21 are sufficiently spaced to permit the free movement of plunger 12 on roller 18 upon the reciprocation of press No. 1 in accomplishing the feed of the metal strip-blank.

Press No. 1 is given an intermittent forward feeding motion with the punches in engagement with the blank and an intermittent return movement to initial position with the punches released from the blank, said movements being accomplished by means of the rocker-arms 27 extending upwardly from and keyed to the rock-shaft 28 which is freely journalled in the bracket-bearings 29 bolted to the end of the table or platform 5, as shown in Figures 1, 2, 5, 12, and 13. This rock-shaft 28 has secured to it a downwardly projecting arm 30 to which is pivoted a rod 31 extending through a bracket 32 and supporting a coil spring 33 confined upon the rod 31 against bracket 32 by means of nuts 34 threaded upon rod 31. The rock-shaft 28 also carries an upwardly projecting rock-arm 35 which is engaged by a cam 36 mounted upon the main cam-shaft 25.

The rocker-arms 27, above referred to, are formed with bifurcated upper ends 27a which straddle two bolts 36a between pairs of oppositely presented flanged bushings 37 mounted upon said bolts 36a. The bolts 36a are threaded into blocks 38 rigidly secured to the reciprocatory bed-plate 8 from which said bolts extend horizontally above the transverse rock-shaft 28. The bolts 36a have threaded upon them adjacent to the blocks 38, the adjustable nuts 39 and at their outer ends adjustable nuts 40, coil springs 41 being confined between the nuts 39 and the annular flanges of the inner bushings 37 while coil springs 42 are confined between the nuts 40 and the outer flanged bushings 37. The arrangement of described cushioning connections between the rocker-arms 27 and press No. 1 is for the purpose of affording a yielding excess of motion to the feeding action of press No. 1 to ensure accuracy in the feeding stroke and maintain the press under tension in its extended position of feed until the metal strip-blank is engaged and held by other instrumentalities presently to be referred to.

43 represents the flat metal strip blank which may be supplied to the machine from any suitable source such as a spool or reel (not shown) from which it can readily be drawn into the machine as needed.

44 is a bracket rigidly bolted to the end of table or platform 5 and formed with a horizontal slot or opening 45 for the passage of the strip-blank 43. This bracket 44 carries two hori-

zontally extending-bracket arms 48 in the free ends of which is mounted a transverse pin 47 upon which is pivoted the bifurcated lower end of a link 48 carrying a removable wear block 48 having a slot or passageway 50 extending through it in alignment with guide opening 45 for the free passage of the metal strip-blank 43. A lower roller 51 is freely journaled upon the pin 52 mounted in bracket-arms 46 and is supported thereby with its periphery in the horizontal plane of feed of metal strip-blank 43 as it passes through feed-openings 50 and 45 above referred to. Cooperating with the lower roller 51 is an upper tension-roller 53 freely journaled upon a pin 54 carried between a pair of arms 55 pivoted at 56 upon the bracket 44 and extending horizontally to a point above the blank guiding link 48. A tension rod 57 passes freely through an opening in a bridge piece 58 connecting arms 55 and is threaded into the upper end of the guide link 48. This rod 57 carries a coil spring 59 confined between the collars 60 by a nut 61 threaded upon the upper end of rod 57. The spring 59 applies tension to the pivoted frame (arms 55 and bridge 58) carrying the roller 53 holding said roller down upon the blank 43 at the point of its support upon the lower roller 51.

Upright members 62 are secured to and project upward from the pivoted arms 55, said upright members 62 being connected at the top by a crossbar 63 (see Figures 1 and 5 of the drawings). An adjusting screw 64 is threaded through the crossbar 63 and carries at its lower end a brake block 65 which engages the periphery of the upper roller 53. A lock nut 66 upon screw 64 engages crossbar 63 and holds the brake lock in the desired adjusted relation to the roll 53. In this manner the tension roller 53 is pressed against the blank 43 by the pressure of spring 59 and the freedom of its rotation upon its axis is further restricted by the adjustment of the brake block 65.

The metal strip-blank 43 passes from the guide slots 45 in bracket 44 through a shallow guide channel 67 formed in the upper face of a heavy plate or block 68 which is rigidly secured to the upright side flanges 7 of tray 6 carried by the table or platform 5. 69 is a clamp member rigidly secured at 70 to the clamping bar 71, which bar is pivoted at its forward end 72 in the bifurcated bracket 73 which is secured by screws 74 to the upper face of the plate or block 68. The clamping bar 71 extends rearwardly and passes freely between two upright guide flanges of bracket 75 which is secured to the plate or block 68. The rear end of the clamping bar 71 carries an anti-friction roller 76 which operates upon the cam 77 carried by the cam-shaft 25. A coil spring 78 connects the clamping bar 71 with a bracket 79 secured to the table or platform 5. The shape of the cam 77 as shown in Figure 5 of the drawings is such that the clamp member 69 will be held down in engagement with the metal strip-blank 43 for the greater part of a revolution of the cam-shaft, the high part of the cam 77 acting to momentarily raise the clamp from the blank while it is given a forward feeding impulse by the means hereinafter described.

Referring particularly to Figures 2, 12, 13, 14, 15, 16, 73, and 74 of the drawings, it will be observed that the reciprocating flanged tray 8 of press No. 1 carries a heavy block 80 having a central opening 81 registering with a similar opening 8a of the bottom plate of bed-plate 8. The fixed tray 6 and the table or platform 5 have

openings through them at 8a and 8a respectively which are somewhat larger than the openings 81 and 8a just referred to to ensure free discharge of chips from these latter openings in all positions of the reciprocating press No. 1.

The block 80 referred to has mounted upon it the upwardly projecting standard 11. The specific mounting of this standard in press No. 1 is similar to that of the third press (Figure 28) and is best shown in Figure 73.

The heavy press block 80 is rigidly secured in the recessed upper face of the reciprocating bed-plate 8 by means of heavy screws 82, one of which is shown in Figure 73, Sheet 25. These screws 82 are preferably inserted from beneath, the table or platform 5 being slotted at 8b and 8c also indicated in dotted lines in Figure 12 of the drawings. The transverse faces of block 80 have threaded into them machine screws 83 which pass through the vertical slots of plates 84 and secure 20 said plates removably to the block 80. The block 80 is formed with a deep dovetail recess 85 to receive the die plates and pillar blocks that are removably mounted therein. There are three pillar blocks indicated at 86, 87, and 88 having chip 25 discharging openings through them leading into the opening 81 of block 80. These pillar blocks are separated by thin spacing strips 89, said strips projecting above the pillar blocks and serving also to separate the three die plates indicated at 90, 91, and 92, see Figure 15. Set screws 93 are threaded through the plates 84 and engage the faces of pillar blocks 86 and 98 for confining the pillar blocks in place and for adjusting the blocks and with them the die plates longitudinally of the machine. The die plates 90, 91, and 92 are surmounted by a cover plate 94 formed with punch receiving openings 95 directly above the openings through the die plates. This cover plate 94 as well as the die plates 90, 91, 40 and 92 are securely fastened to the pillar blocks 86, 87, and 88 by means of vertical set screws 96 which pass through the cover and die plates and are threaded into the pillar blocks. Cover plate 94 has a guide groove 97 in its under face in the longitudinal line of punch receiving openings 95 and in the line of feed of the metal strip-blank 43 which passes between the cover plate and the die plates and is supported thereby for the action of the punches upon the blank.

It will be understood that the punch members 13, 14 and 15 are shaped to cooperate with the dies in punching parts from the metal strip-blank, the particular parts of the work performed by these punches and dies being hereinafter more fully described.

Beneath the plate or block 88 a transverse abutment bar 98 is rigidly secured in cutout notches 7b of flanges 7 of tray 6 by means of set screws 99, the central portion of said bar 98 being thickened and seated in shallow recess 8c in bottom of tray 6 where it is further secured by screw bolts 99a. Bar 98 is perforated at 100 to receive the reduced end of an abutment block 101 which is driven tightly into said perforation 100.

The reciprocating bed-plate 8 of press No. 1 carries the transverse abutment bars 102 and 103 which are centrally perforated to receive the reduced ends of abutment blocks 104 and 105 which 70 are driven into said perforations. These bars 102 and 103 are firmly seated in notches and recesses in the side and bottom walls of bed-plate 8 and are secured to the bed-plate by means of set screws 102a and 103a. The abutment block 75

104 is in line with the abutment block 101 with which it engages to limit the movement of press bed-plate 8 to the right. The abutment block 105 is formed with a transversely bevelled or inclined face that is adapted to contact with the bevelled face of an adjustable abutment block 106 which is mounted on the inner face of a transverse abutment bar 107 rigidly secured to the notched out flanges 7 of the fixed tray 6 by means of set screws 108, said bar 107 having formed in it a horizontal slot 109 to loosely receive a screw 110 that passes through said slot and is threaded into the adjustable abutment block 106, see Figure 76, Sheet 25. Abutment block 106 is formed with the slots 106a through which loosely pass the screw bolts 106b which pass through the bottom of tray 6 and are threaded into suitable openings in table 5. Oppositely arranged adjusting screws 111 are threaded through the upright flanges 7 of tray 6 and engage the ends of abutment block 106 for accurately determining the position of block 106 to cause it to arrest the feeding movement of bed-plate 8 of press No. 1. It will be understood that when block 106 is adjusted the screw bolts 106b and 110 are first loosened, then block 106 is adjusted by manipulating bolts 111, after which bolts 106b and 110 are tightened to secure block 106 in its adjusted position.

A consideration of the disassembled perspective view of Figure 74 (Sheet 25) with Figure 73 (same sheet) and Figure 12 (Sheet 8) will give a clearer understanding of press No. 1. The blocks 38 (by which the operating mechanism is connected to the reciprocating tray 8) are flanged and cut away to accurately fit the corners at the right hand end of tray 8 to which the blocks are secured by screws or rivets set in the matching perforations in the parts. The tray 8 with attached blocks 38 rests in stationary tray 6 with the top shoulders of blocks 38 operating to the right of abutment bar 98. The bottom wall of tray 8 is cut out or recessed to avoid interference with the central thickened portion of abutment bar 98.

The metal strip-blank 43 passes from press No. 1 through press No. 2 which carries two sets of male and female dies for acting upon and shaping the portions of the strip-blank that have been punched out by press No. 1.

Forming dies—press No. 2

Press No. 2 comprises a flanged bed 112 having outwardly flared side walls resting between the undercut side flanges 7 of the tray 6 and rigidly clamped therein by set screws 113. The flanged bed supports the closely fitting bed-block 114 which is rigidly secured therein by means of set screws 115 inserted from the bottom through the bed 112 to the block 114. Block 114 carries the removably mounted transverse plates 116 held in place by screw bolts 117 threaded into block 114 and engaging the plates 118 through vertical slots of the plates. The bed-block 114 is formed with a transverse recess 118 having undercut side walls to receive the die plate 119 secured in the desired adjusted position upon the bed-block by means of adjusting screws 120 passing through the transverse plates 116 and engaging edges of the die plate 119. The die plate 119 is formed with two cylindrical openings 121 and 122 to receive the cylindrical base blocks of the lower female die members 123 and 124 hereinafter more fully described. The die plate 119 is formed adjacent to its four corners with cylindrical recesses 125 in which are seated the coil expansion springs

126 upon which rests the stripper plate 127 having secured to it by means of machine screws 128 a cover plate 128. Headed guide rods 130 pass freely through guide openings in the stripper plate 127 and attached cover plate 128 and centrally through the coil expansion springs 126 and are threaded into and rigidly secured in the reduced holes in the bottom of recesses 125 of die plate 119.

The stripper plate 127 has a guideway 131 and aligned rectangular openings 127a and 127b to fit over the upwardly presented female die members of the die blocks 123 and 124 and the cover plate has a rectangular opening cut through it above the said openings in the stripper plate. The detail features of stripper plate 127 will be best understood by reference to Figure 75, Sheet 25, of the drawings. It will be observed that said stripper plate 127 is also formed with a rigid upwardly presented lug 131a at one side of guideway 131 and a cylindrical upstanding stud 131b at the opposite edge of guideway 131 and alongside of the die receiving opening 127b. The guide lug 131a supports the upper die member 142 against forward displacement and strain in its action upon the punched blank, while the guide stud 131b assists in maintaining the blank in accurate alignment in the guideway 131 during the action of the dies. The guideway 131 is formed in the upper surface of stripper plate 127 for the passage of the metal strip-blank 43 beneath cover plate 128 by which the blank is held for the action of the dies of press No. 2.

132 is the head or standard of press No. 2, it being mortised into the bed-block 114 and rigidly secured thereon by heavy anchoring screws (not shown) similar to screws 163 and 249, Figures 28 and 32 respectively. This head or standard 132 carries the usual vertically reciprocating plunger 134 having at its upper end a sectional slotted yoke 135 engaged by an anti-friction roller 140 upon the pin 136 mounted in the forked end of the operating lever 137 which is pivoted upon the bracket 138 secured to the table or platform 5 and is engaged at its rear end by an operating cam 139 mounted upon the cam-shaft 25. 141 and 142 are upper or male die members removably mounted in suitable sockets presented downwardly in the reciprocating plunger 134 and removably secured therein by set screws 143. Die members 141 and 142 cooperate with the dies carried by blocks 123 and 124 above referred to, and shape the punched-out parts of the metal strip-blank in the manner hereinafter more fully described. In this operation of press No. 2 it will be understood that the spring supported stripper plate 127 and attached cover plate 128 are carried downwardly by the metal strip-blank when press No. 2 operates, thereby permitting the male and female dies to properly shape the previously punched-out parts of the blank and when released from press No. 2 the springs 126 raise the attached plates 127 and 128 and strip the blank from the horns or projections of the lower die members.

Punch press No. 3

The metal strip-blank 43 passes from press No. 2 through press No. 3 which performs the final punching operation upon the blank. This press No. 3 comprises the flanged bed-plate 144 shaped to fit and secured between the undercut flanges 7 of tray 6 in substantially the same manner as described with reference to press No. 2, the bed-plate 144 being secured in position by set screws 145. The table or platform 5 has a 75

discharge opening 5*d* and the tray 6 has a registering discharge opening 5*b* which register with a chip discharge opening 146 of bed-plate 144 and opening 147 of bed-block 148 which is secured to the bed-plate 144 by means of set screws 149 inserted from beneath bed-plate 144. The bed-block 148 carries transverse plates 150 removably secured by screw bolts 151 in the manner hereinbefore described with reference to the plates 118 of press No. 2. Bed-block 148 is formed with a longitudinal recess 152 having undercut walls in which rests the block 153 having flared side walls to closely fit the recess 152. Screw bolts 150*a* are threaded through transverse plates 150 and engage the opposite ends of block 153 to adjust its position with reference to the action of the punch of press No. 3. Screw bolts 154 threaded in block 148 engage the front bevelled face of block 153 to secure it in its adjusted place. Block 153 has a chip opening 155 discharging into opening 147. The die plate 156 is seated in the recessed upper face of the block 153 and surmounting the die plate 156 is a channeled cover plate 157 secured to block 153 by screw bolts 156. This cover plate 157 has an opening 158 to receive the punch member hereinafter referred to and a longitudinal guide channel 160 extending across said opening and the lower die plate 156, said guide being for the passage of the metal strip-blank 43 in proper relation to the punch of press No. 3. 161 is the head or standard of press No. 3 mortised at 152 to the bed-block 148 and rigidly secured to the bed-block by means of heavy screw bolts 153. This head or standard 161 has the usual vertically reciprocating plunger 164 having the sectional slotted yoke 165 at the top which is engaged by a pin 166 carried in the bifurcated forward end 167 of lever 168 which is pivoted upon a bracket 169 secured to the table or platform 5. The lever 168 is engaged at its rear end by a cam 170 upon cam-shaft 25.

The reciprocating plunger 164 carries the removable punch 171 secured in the usual manner by set screw 172, the punch 171 being presented in proper vertical alignment with the opening in the lower die plate 156. 173, shown particularly in Figures 18, (Sheet 9) and 28 and 29 (Sheet 11) of the drawings, is a gauge or pilot formed on its inner reduced end with prongs or fingers 174 which are adapted when pressed inwardly toward the metal strip-blank 43 to engage three successive recesses cut in the forward edge of the blank and by such engagement accurately position the blank for the final action of the punch 171. This gauge or pilot 173 operates upon the forwardly presented guide plate or table 175 which is recessed to fit over the forward shoulder of bed-block 148 to which it is secured by set screws 175*a*; said gauge 173 being presented in the forwardly open recess 176 of cover plate 157, and having a lower cutout portion 174*a* (Figure 29) fitting over the die plate 156. This pilot or gauge plate 173 is confined by means of guide plates 177 and is formed with a vertical rectangular slot 178 with which engages the lower shaped end 179 of the vertical lever 180 pivotally mounted at 181 upon a bracket 182 secured to the face of the upright head or standard 161. This lever 180 has pivoted to it a yoke 183 secured to the end of a rod 184 which passes through a suitable opening in head or standard 161 and supports a coil expansion spring 185 which is confined between the standard 161 and a nut 186 on rod 184. The

action of this spring 185 upon lever 180 is to hold the pilot or gauge 173 in its forward or inactive position. The upper end of lever 180 is bevelled to engage a tappet 187 secured to the reciprocating plunger 164. It will be clear from this description that when the plunger 164 operates, the pilot or gauge 173 will first move into engagement with the recessed forward edge of the blank to accurately position it, and immediately thereafter the punch 171 will punch out the final part of the blank.

Connected view of actions of punches and dies of presses Nos. 1, 2, and 3 in forming metal closure members

The action of the several punches and dies carried by presses Nos 1, 2 and 3 will be best understood by reference to the detail enlarged views of Figures 19 to 27 on Sheet 10 of the drawings. Figures 19 and 20 show the action of the three punches 13, 14, and 15 of press No. 1. A plan view of the shapes of the die openings in die plates 80, 91 and 82 to receive punches 13, 14, and 15 is indicated in Figure 20. These three punches being mounted upon the common reciprocating plunger 12 will act simultaneously upon the metal strip-blank 43, but, because of their spaced relation, upon successive portions of the blank. Punch 13 forms perforations 43*a*, punch 14 forms recesses 43*b* and punch 15 cuts the notches 43*c* in the inner edge of blank 43 to open up the previously formed perforations 43*a* to form the oppositely presented prongs 43*d* which eventually are shaped into the final bifurcated hock of the fastening members.

Figures 21 to 25 illustrate the action of press No. 2. Press No. 2 carries two sets of shaping dies, one set comprising the lower female member 123 having spaced horns to project through two adjacent openings 43*a* of the blank, and an upper male die member 141 which is a simple scoring blade adapted to strike the blank between two perforations 43*a* and impart a transverse score or shallow cut 43*e* centrally between prongs 43*d*. This is for the purpose of assisting in shaping the final bifurcated hook and arched neck of the fastening member, the completion of this shaping operation being performed by the second set of dies 124 and 142. The lower female die member 124 has wings engaging the rear face of the blank adjacent to openings 43*a* upon opposite sides of a scored portion of the blank and a U-shaped head to receive the pronged head of the blank, the upper cooperating male die member 142 having a central rounded blade 142*a* designed to press the pronged head down into the recessed portion of the lower die member to properly curve the prongs 43*d* into the bifurcated hook and to shape the neck of the hook into the arched rounded neck portion. The blade portion 142*a* is preferably made as a removable section of the upper die member 142, it being inserted in a longitudinal slot or kerf in the end of the die member and removably secured therein by means of a pin or rivet 142*b* shown in Figure 25. After shaping the bifurcated hooks by press No. 2 the strip-blank or attached series of partly formed fastening members, passes to press No. 3 which carries a single punch 171 which intermittently acts to cut the dovetail recesses 43*f* in the forward edge of the blank between adjacent recesses 43*b*. Figure 27 shows a plan view of lower die openings to receive punch 171. This completes the shaping of the metal members with the exception of the riding

lugs hereinafter referred to which are formed by cutting the remaining narrow strip of the blank between the formed heads and clamping jaws.

A continuous strip of connected properly shaped fastening members passes from press No. 3 through a longitudinal guide which supports the strip under the action of the buffing devices and auxiliary feed mechanism from the latter of which it is passed to the final press No. 4 by which the individual fastening-members are severed from the strip and delivered to the carrier which carries them away from the cut-off mechanism and supports them for mounting upon the flexible stringer or tape.

Buffing mechanism

This longitudinal guide leading from press No. 3 as just referred to, best shown in Figures 1, 2a, and 11, comprises a lower rigid bar 188 mounted upon the table 5 by means of supporting blocks 189 and formed in its upper face with a guide groove or channel 190 of approximate L-shape to receive the strip of connected formed fastener-members, and an upper covering plate 191 secured to the lower bar 188.

This horizontal guide 188—191 is vertically recessed at 192 to receive the peripheries of two buffing wheels 193, each of which is mounted upon a short shaft 194 freely journaled in the spaced bearings 195 of the H-shaped rocking frame 196 journalled at its lower end upon the pivots 197 and 198 carried by the bracket-frames 199 and 200 which depend from and are rigidly secured to the under face of the table or platform 5. The bracket 200 is centrally located between the two brackets 199 and forms a common support for the adjacent arms of the two H-shaped rocking frames 196. Each of the buffer carrying shafts 184 has secured to it between the bearings 195 a belt pulley 201, over which runs a driven belt 202 passing from the driven pulley 203 carried by the main power shaft 204 which will be hereinafter more fully described. Each of the belts 202 is engaged by any suitable form of belt tightener such as indicated at 205.

206 is a bracket secured to the table or platform 5 (in rear of the buffing wheels 193) to which bracket is pivoted at 207 the upwardly extending rock-arm 208 supporting in its upper bifurcated end an anti-friction roller 209 that operates in peripheral engagement with a cam 210 upon the cam-shaft 25. This rocker-arm 208 has adjustable link connections 211 with the inner bearings 195 of both buffing wheels 193. A coil spring 212 connects each of the H-shaped rocking frames 196 with the flange of the table or platform 6 for holding the buffing wheels 193 in their rearward position away from the metal strip-blank in its channelled guide and the anti-friction roller 209 in close contact with the actuating cam 210. The high portion of the cam 210 moves the buffing wheels into engagement with the exposed parts of the formed strip of fastener-members while the strip is at rest and moves the buffing wheels away from the strip for each feeding stroke. The action of the buffing wheels may be maintained during a longer or shorter portion of the time of rest of the blank according to the buffing requirements.

Auxiliary feed

The work passes from the channelled guide bar 188 to an auxiliary feed device clearly shown in Figures 30, 31 (Sheets 11 and 12) and Figure 78

(Sheet 26), and comprising a reciprocatory slide plate 213 formed in its upper surface with the blank guiding channel 214, and mounted to reciprocate in the channel 215 formed in the upper face of a flanged block 216 secured to the table 5 or platform 5 by means of screw bolts 217. The slide plate 213 is formed with laterally projecting wings 218 and 219 which rest in lateral projections 220 and 221 of the guide channel 215, the slide plate 213 with its lateral projections 218 10 and 219 being of approximate Greek cross shape in plan, as clearly shown in Figure 78 of the drawings. Plates 222 and 223 are secured to the flanged block 216 by screws 224, said plates overhanging the slide plate 213 for confining it upon 15 the block 216. The lateral wing 218 of the cross-shaped slide plate is formed in its upper face with a lateral guide groove or recess 225 in which operates a slide plate 226 formed on its inner end with three prongs or fingers 227 which are 20 designed to engage three adjacent recesses in the forward edge of the metal strip-blank, or connected series of nearly complete fastener-members, and thereby clamp or grip the blank to the auxiliary feed slide. This slide plate or gripper 25 226 is formed with a vertical rectangular slot 228 in which engages the lower rounded end 229 of an operating lever 230 which is formed with an integral ear 231 operating in the bifurcated upper end 232 of the upright or standard 233 secured 30 to the slide plate 213 by means of screw bolts 234, a cover plate 235 being mounted upon slide 213 beneath the standard 233, said cover plate extending over the guide channel 214. The upper end of the operating lever 230 is slotted at 35 236 to receive the elongated roller 237 mounted upon pin 238 carried by bracket arm 239 which is mounted upon and vertically reciprocated by the plunger member of press No. 4 which will presently be described.

This auxiliary feed has an operating rod 240 40 adjustably connected at 241 with a lug 242 projecting from slide 213. Said operating rod 240 extends to the right of the machine to a point in rear of reciprocating press No. 1 to which it at- 45 tached as shown particularly in Figures 73 and 77 of Sheets 25 and 26 of the drawings. A block 243 is fitted upon and secured to the upright or standard 11 of press No. 1, bolts 243a passing through the block into the standard. Bar 240 is 50 bolted at 240a to block 243. By this means the auxiliary feed is operated by and simultaneously with the feeding motion of press No. 1 which has been already described. Immediately prior to the movement of the auxiliary feed through the 55 connections referred to, the lever 230 is actuated to move the slide plate or gripper 226 into engagement with the metal strip-blank to feed the blank one step in the machine. The cooperation of the main feed of press No. 1 and the auxiliary 60 feed which is coupled thereto results in uniform feeding of the blank and avoids all possible irregularities such as would sometimes be caused by burrs formed upon the blank by the punching operations.

Fastener-member cut-off press

The work next passes to press No. 4 which cuts 70 the individual completely formed fastener-members from the continuous strip. This press No. 4 is particularly illustrated in Figures 7, 8, 9, 10 (Sheet 6), 31 (Sheet 12), 32, 33 (Sheet 13), 65 (Sheet 24) and 79 (Sheet 26) of the drawings. Press No. 4 is mounted upon a plate 244 secured 75

to the table or platform 5 by means of screw bolts 246 inserted from beneath and extended up into the press base member 245. The upper face of base member 245 has mortised in it at 247, the upright head or standard 248, the two parts of the press being firmly secured together by screw bolts 249. Base member 245 has formed in it a longitudinal dovetail recess to receive the correspondingly dovetailed block 250, said block being secured in the desired adjusted position by means of screw bolts 252 and plates 253 and 254, said plate 253 carrying screw bolts 255 which engage the end of block 250. The plates 253 and 254 are secured to base member 245 by means of screws 256. It will be observed that the plate 254 extends only part way across one end of the base member 245 (see particularly Figure 33 of the drawings). The block 250 is formed with a central transverse groove or recess to receive a hardened metal plate 257 (shown in detail in Figure 10) which is secured in place by screw bolts 258 and 259. This hardened plate 257 has a central opening 260 to receive the tapered end of a pilot member presently to be described, said opening 260 registering with a central opening 261 formed through block 250. 262 is a cover plate secured to the face of block 250 by screw bolts 263. This cover plate 262 extends part way over the surface of block 250 and is formed in its under face with a guide groove or channel 264 for the passage of the work. An angular extension 265 of the cover plate is formed with a countersunk hole 266 presented above the work and registering vertically with the guide opening 260 of the hardened plate 257. This hole 266 is for the reception of the pilot member to be described. The cover plate is formed with a further extension in the form of a horn or arm 267 which projects parallel with the guide groove or channel 264 to confine the work against rearward displacement upon the extension 260a of block 250 during the cutting operation. This extension 260a is produced by cutting away the block 250 in the rear of delivery end of press No. 4, this cut-away being for the purpose of affording proper room for the operation of the fastener-member-carrier hereinafter described. The extreme edge of extension 260a is slightly undercut or inwardly bevelled from top to bottom as shown particularly in Figure 65, Sheet 24 of the drawings. The upper edge of this undercut wall is one of two slightly spaced parallel edges of the bottom or stationary member of the cut-off device. The cooperating parallel edge of the lower cut-off member is formed on a hardened metal plate 268 which is secured adjacent to the undercut face of extension 260a with a slight space at the upper or cutting edges of the two members, said space being maintained by means of a wedge shaped shim or spacing member 269; the plate 268 and shim member 269 being mounted upon parallel pins 250b projecting from extension 250a and securely held in position by a screw bolt 270, shown in Figure 65 being threaded through and supported by plate 254 with its inner end impinging upon or pushing against plate 268 and binding it in operative position. The spacing member 269 is somewhat narrower than extension 250a and plate 268 to provide a groove below the cutting edges of these members within which the cut-off knife of peculiar shape can operate. 271 is a curved leaf spring secured to cover plate 262 by screw 272, said spring curving around the guide hole 266 in which the pilot member operates and its free end being bent to

engage the upper surface of the work parallel with the horn 267 and terminating close to the path of the cut-off knife. The work is further held at the moment a fastener-member is cut off by means of an overhanging finger 273 which has upon its under face a guide channel or groove in which projects the U-shaped clamping end of the tooth or fastening-member while it is being cut off from the strip. This overhanging guide finger 273 is integral with a supporting plate 274 which is secured by two screws 275 to the upper edge of plate 254 above referred to.

The movable cutting knife, shown clearly in Figures 8, 9, 32, and 33 comprises a cutting blade proper indicated at 276 mounted in the recess 277 of a supporting rock-arm 278 and firmly clamped therein by a screw bolt 279 engaging a similarly shaped filling plate 280. The knife carrying rock-arm 278 is journaled at 281 between the integrally connected face plates 282 283. Base plate 283 is securely mounted in the upper face of block 250 alongside the cover plate 264 by means of screw bolts 284 and the bolt 259 above referred to which also extends through the hardened plate 267. The knife-supporting face plates 282 extend into the recess or cutout 285 formed partly in the base 246 and partly in the head or standard 248, see Figures 32 and 33. This mounting of the movable knife on its carrying frame presents a downwardly extending heel 276a which projects into the groove or channel between the cutting edges of the lower knife member comprising extension 260a and block 260. This heel 276a ensures the accurate registry of the blade 276 with the grooved lower cutting member. The knife carrying rock-arm 278 has a downwardly curved heel 278a with which engages the small plunger 286 which operates in a cylindrical cavity 287 in the base member 246 and supports a surrounding expansion spring 288 which is adjustably confined by a threaded tubular nut 289 screwed into the outer threaded end of the cylindrical cavity 287 into engagement with the plunger rod and spring and held in the desired adjusted position by the external lock nut 290 as shown in Fig. 8. The action of the spring plunger 286 upon the heel of the knife carrying rock frame is to yieldingly maintain the knife in elevated position above the path of the work.

The head or standard 248 supports a vertically reciprocating plunger 291 carrying at its upper end a sectional slotted yoke 292 engaged by an anti-friction roller 293 carried upon a pin 294 mounted in the bifurcated end 295 of operating lever 296 which is pivoted upon the bifurcated bracket 297 secured to the top of the table or platform 5 and is engaged at its rear end by a cam 298 on the main cam-shaft 25.

This vertically reciprocating plunger 291 (Figure 7) has the bracket arm 239 secured to it by means of a screw bolt 239a, said bracket having been heretofore referred to as the operating means for the lever 230 of the auxiliary feed mechanism. This reciprocating plunger 291 of press No. 4 has secured to its lower end a plate 299 secured by screws 300, see Figure 65, Sheet 24 of the drawings. This plate 299 is perforated at 301 to receive the stem of a tappet 302, the stem of said member having a driven fit with the perforation 301. The tappet member 302 is presented directly above knife-carrying rock-arm 278 so that upon the descent of plunger 291 tappet 302 will engage rock-arm 278 and cause 75

the knife to operate. The raised position of the plunger and knife is shown in Figure 32 while the position immediately after cutting is illustrated in Figure 33.

5 A vertical cylindrical socket 303 extends up through plate 299 into plunger 291 and mounted in this socket is a tubular bushing 304 supporting a pilot member 305 which has a tapered active lower end 306 and a confining disk or head 307 at its upper end, an expansion spiral spring 308 being confined in socket 303 by the head 307, while the whole device is removably held in the socket of the plunger by means of a screw 309 which passes through the face of the plunger 291 and engages the tubular bushing 304. This pilot member 305 is supported directly above and in axial alignment with the opening 260 and hole 266 of the parts above referred to in which position it is ready upon the descent of the plunger to engage between the jaws of one of the forwardly presented U-shaped clamps of an attached fastening-member. This engagement of the pilot with a fastening-member while it is still part of the continuous strip of formed members will position the strip with great accuracy to place the final fastening-member in exact relation to the plane of cut-off for the action of the cutting-off devices.

10 The plunger 291 also carries a transverse plate or bar 310 slotted at 311 and secured to the plunger by set screw 312 passing through slot 311. This plate or bar 310 has a vertical cylindrical socket 313 adjacent its free end in which is mounted a spring plunger 314 having a stem 315 extending through the upper wall of the socket 313 and confined by a nut 316 threaded upon the stem, a spiral spring 317 being held between the plunger and the upper end of the cylindrical socket. This spring plunger 314 acting as a spring tappet is for the purpose of operating the gripper of the fastener-member-carrier which will presently be described.

Fastener-member-carrier

45 As each fastener-member is presented in position to be cut off as above explained, a carrier member is moved into position to grasp the projecting fastener-member and firmly support it while it is cut off, and then moved away with it to the next station. This carrier comprises a suitable track-bar supporting the carriage with a member gripper and proper control and operating devices which will now be described with particular reference to Figures 2a (Sheet 3), 6 (Sheet 5), 31 (Sheet 12), 32, 33, 34, 34a, 34b, (Sheet 13), 35, 36, and 37 (Sheet 14).

50 318 is a heavy plate or bar, in effect a track-bar which extends longitudinally of the machine and is rigidly mounted upon the table or platform 5 by means of screw bolts 319 passing up from beneath the table into the track-bar. This track-bar 318 also overlaps at one end the bed-plate 244 upon which press No. 4 is mounted, track-bar 318 being cut-out to fit over bed-plate 244 and being further secured in this position by machine screws 320 which are inserted from beneath the bed-plate 244, Figure 35. Track-bar 318 is formed with a deep longitudinal recess of dovetail cross-section to form trackway 321 for the reciprocating carriage 322 which has flared side edges to correspond with the shape of the trackway in the bar 318. A shim 323 is placed between one edge of the carriage 322 and the rear guidewall of trackway 321, said shim being

engaged by screw bolts 324 to hold the parts in desired adjusted position.

5 The carriage 322 has secured to it at one end a transverse bar 325 secured by screw bolts 326 and with its rear end projecting beyond the carriage to form a stop at 327 which at the inner limit of the carriage stroke engages the head of a stop screw bolt 328 adjustably mounted in a lug 329 projecting upwardly from the rear portion of track-bar 318, Figure 31. A stop 330 in the form of a screw bolt is mounted in the end of carriage 322 in position to engage a similar screw bolt stop 331 which is adjustably threaded in a cross-bar 332 extending across and secured to the track-bar 318. The stop 330, 331 is the limit 15 of the outward movement of the carrier.

20 Carriage 322 is formed with a transverse dovetail groove 333 in which is seated a block 334 having a base shaped to fit groove 333 and rigidly secured to the carriage by means of screw bolts 20 indicated at 335. This block or auxiliary part of the carriage has a forwardly projecting integral shoulder 336 to which is secured a similarly shaped hardened metal plate 337 by means of machine screw 338. 336 and 337 are in the form of an 25 anvil projecting forwardly from the carriage 322, 334, adjacent to its inner end, the extreme projection or nose 339 is formed with a shallow curved recess 340 ending at its inner edge in an abrupt curve said recess being an exact counter-30 part of the outer face of the rounded arched neck and bifurcated hook of the fastener, as shown in Figures 34a and 34b, Sheet 13 of the drawings. This grooved nose of the anvil just described constitutes the lower fixed member of a gripper 35 which grips the yoke ends of individual fastener-members at the moment they are cut off and conveys them to the point where they are clamped to the tape or stringer.

40 The upper member or jaw of this gripper consists of a downwardly presented finger 341 having shallow grooves extending from front to back to form a central tip 342 shaped to engage the scored upwardly presented surface of the arched neck of the fastener-member that is 45 clamped against the lower gripper nose 339. Upper gripper-member or finger 341 is also formed with a recess 343 to fit over the upwardly presented prongs of the bifurcated hook of the fastener-member when it is gripped. The grip-50 per-finger 341 is formed upon a small base plate 344 which is secured by screws 345 to the forward edge of a gripper-carrying plate 346 which is mounted between two guiding upstanding plates 347 which are parts of the block 334 of the carriage. This gripper-carrying plate 346 is pivotally mounted upon a pin 348 extending through its rear lower corner and secured in the upstanding guide plates 347. A vertical cylindrical recess or pocket 349 receives a coil expansion spring 60 350 which rests at its lower end upon a shoulder 351 of the recessed block 334. This spring tends to normally hold the carrier gripper open, that is, with the upper gripper member 341 raised away from the lower gripper nose 339. 65

70 The pivoted gripper carrying plate 346 has an upwardly projecting lug 352 which is rearwardly bevelled at 353 and transversely grooved at 354 for the engagement of a locking lever 355 which is pivoted at 356 upon a pin passing through spaced guide flanges 357 which are integral with one of the plates 347. This locking lever 355 is formed with a rounded nose 358 designed to engage the shallow groove or recess 354 of gripper-carrying plate 346 to frictionally hold the same 75

In open position, and, when the gripper is closed, to move into engagement with bevelled face 353 to lock the gripper in closed position upon a fastener-member. The face of the locking lever 355 which engages the bevel 353 of the gripper plate is also bevelled as indicated at 355 with the result that the coaction of the two bevelled faces 353 and 355 will exert a strong locking pressure upon the gripper jaws and said pressure being exerted by an arrangement of spring actuated levers presently to be explained will be a constantly exerted pressure to ensure a firm grip upon a fastener-member.

The locking lever 355 has a short longitudinal slot 360 with which engages a pin or lug 361 carried by a bell-crank lever 362 which is pivoted at 363 in a longitudinal channel 364 of carriage-block 322. Bell-crank lever 362 has an arm 365 by which the gripper-lock is released as hereinafter explained. The coil spring 366 seated in cylindrical cavity 367 in auxiliary block 334 engages the heel of lock lever 355 adjacent to its point of engagement with lateral lug 361. This spring 366 maintains the locking lever under spring pressure constantly to lock the gripper-carrying plate in either open or closed position.

The transverse bar 325 of the carriage 322 is notched at 368 to receive the end of a short link 369 which is pivotally anchored in notch 368 by means of a pivot pin 370. This link 369 is connected by a pivot bolt 371 to the lower end of a lever 372 pivotally mounted at its upper end 373 upon an upright bracket-arm 374 which is bolted rigidly to the track-bar 318. This lever 372 is formed with a longitudinal slot 375 in which is adjustably mounted a pivot bolt 376 carried by the long rod or bar 377 which extends over to the right hand end of the machine as shown in Figures 1 and 2 where its threaded end 378 is adjustably connected with a link 379 pivotally connected at 380 to the upper end of a rock-arm 381 projecting from an integral bearing hub 382 suitably journaled upon a bearing sleeve upon rock-shaft 26. The hub 382 carries a second integral rock-arm 383 carrying at its upper end an anti-friction roller 384 operating in a groove cam 385 carried by the main cam-shaft 25. By this last described mechanism the fastener-member carrier is intermittently reciprocated upon its track for taking a fastener-member from the cut-off position to the station where it is clamped upon the tape or stringer.

Operating between press No. 1 and press No. 2 is an intermittently operating brush 386 designed to brush off any chips or scraps that might possibly pass from the punch mechanism of press No. 1 and interfere with the accuracy of subsequent operations upon the metal strip-blank. This brush 386 is carried on an angular bracket-arm 387 pivoted at 388 to plate 389 secured to the rod or bar 377. 390 is a tray or chute suitably secured at 391 to tray flange 7 and extending beneath the work and brush 386 to collect any chips and convey them from the machine. See Figures 1 and 1a on Sheet 1 of the drawings.

Returning to the consideration of the control of the gripper of the fastener-member-carrier it will be observed that track-bar 318 is formed with a longitudinal slot 392 in which operates a controlling lever 393 mounted upon a rock-shaft 394 which is journaled in and extends rearwardly through a part of the track-bar 318. At the rear end of this rock-shaft 394 a rock-arm 395 projects upwardly and carries an anti-friction roller 396 which is presented in operative rela-

tion to cam-block 397 which is carried by the cam 255 on cam-shaft 25 as above described, see Figure 2a (Sheet 3) and Figure 81 (Sheet 26) of the drawings. A coil spring 398 connects the rock-arm 395 to the bracket-arm 399 projecting from one of the bearing brackets 28, said spring 398 yieldingly holding the arm 395 in the path of the cam-block 397 and the lever 393 in the bottom of the groove 392. Lever 393 carries adjacent to its free end an adjustable stop 400 in the form of a screw bolt which engages the bottom of the groove, and also a second adjustable stop bolt 401 presented upwardly in position to engage the arm 395 of bell-crank lever 362. It will be observed that bell-crank lever 362 is arranged in the same vertical plane as the tripping lever 393 and that when the carriage is moved to its extreme left in position to present a fastener member to the tape or stringer, the arm 365 of bell-crank lever 362 will at that time be presented directly above adjustable stop 401 of the tripping lever 393, as shown in Figure 36, (Sheet 14) of the drawings. In this position, with proper relation to the tape or stringer mechanism and the fastener-member clamping devices, the cam-block 397 acts to raise trip lever 393 to open the member carrying gripper and release the member as it is fastened to the tape or stringer.

Stringer forming mechanism

Mechanism for folding a tape into a two-ply stringer having a four-ply thickened or beaded edge, (said closure stringer being covered by Patent No. 1,585,654 dated May 25, 1926), is arranged at the delivery end of the machine in front of and opposite the delivery position of the fastener-member-carrier. This mechanism will now be described with particular reference to Figures 6 (Sheet 5), 7 (Sheet 6), 38 (Sheet 15), 39, 39a, 39b, 39c, 40, 41, 42 (Sheet 16), 43, 44, 45, 46, 47, 48 (Sheet 17), 56 (Sheet 20) and 80 (Sheet 26).

The table or platform 5 is cut out at 402 to form a well in front of the track-bar 318 of the fastener-member-carrier. A heavy horizontal bed-plate 403 is rigidly secured by screw bolts 403a to the table or platform 5 in front of the cut-out well or opening 402. This bed-plate 403 is provided with flanges having under cut surfaces 404 constituting a guide track for the horizontal base portion 405 of a reciprocatory frame which carries the tape-forming, feeding and other associated mechanisms. This portion 405 of said frame is dovetail in cross section to operate within the guide surfaces 404, a shim or wearplate 406 being adjustably held between one of the guide surfaces 404 and the member 405 by means of screw bolts 407, Figure 58. This horizontal or base portion 405 of the frame has secured to it two rack bars 408 which are in constant mesh with gear wheels 409 fixed upon a shaft 410 journaled in the side brackets 411 attached to the bed-plate 403. The bracket 411 at one side is integral with a plate which extends rearwardly upon bed-plate 403 and terminates in the spaced guide arms 411a which embrace one of the oppositely projecting horizontal guideway members 484 hereinafter referred to. The shaft 410 is extended beyond the bearing at one end to receive a rock-arm 412 which is fixed to the shaft and is longitudinally slotted at 413 to receive the adjustable pivot bolt 414 carried in the forward end of a rod or pitman 415 extending rearwardly and pivotally connected at 416 to the upper end of a rock-arm 417 formed integrally

with a hub 418 freely journaled upon a short shaft 410 carried in the brackets 420 secured to the table or platform 5. This hub member 410 also has formed integral with it a rearwardly projecting rock-arm 421 carrying in its end an anti-friction roller 422 operating in the box cam 423 carried by the main cam-shaft 25. This described mechanism causes the base frame 405 supporting the tape-folding and associated devices to be intermittently moved inwardly and outwardly toward and away from the fastener-member-carrier.

The bed-plate 403 has secured to its forward end a stop bar 403b which is centrally perforated for the free passage of a screw stop bolt 405a which projects forwardly from the reciprocatory frame base 405 and carries the adjustable stop and lock nuts 405b. By these means the reciprocations of the frame carrying the tape folding and associated devices can be adjusted.

The horizontal base portion 405 of the described frame has formed integral with it the upright side frames or standards 424 united by a heavy back web or plate 425, parts 405, 424, and 425 constituting a rigidly braced heavy frame for supporting the mechanisms which will now be described, see Figures 6, 39, and 56 of the drawings. This frame reciprocates upon the bed 403 above referred to.

As hereinafter more fully pointed out, the reciprocatory frame 405, 424, 425, has rigidly secured to it the oppositely projecting guideway members 484, which, in addition to their functions later to be pointed out, serve the important purpose of supporting said reciprocatory frame at its rear or inner corners. The guide member 484 nearest to press No. 4 slides in the guide fingers 411a of the supporting bed 403, while the opposite guide member 484 is embraced by the heavy guide yoke 403x projecting from the supporting block 403y rigidly bolted to the table or platform 5 at the end of cut-out 402.

Mounted upon one of the standards 424 is an upright arm 426 supporting in its upper end a bolt 427 on which is journaled a spool or reel 428 upon which is wound a supply of suitable tape or webbing 428 from which the stringers or carriers of the flexible closures are made. The spool or reel 428 is engaged by a brake member 430 pressed against the spool or reel by spiral springs 431 confined upon the bolt 427.

The web or plate 425 is cut away or slotted at 425a and mounted upon the plate 425, beneath the slot 425a is a bracket plate 432 carrying a metal block 433 which is suitably shaped and cut away to receive the operating parts now to be described. Block 433 is surmounted by a vertically projecting U-shaped tape former 434 having perforated ears 435 through which attaching screws 438 pass to secure it in position on top of the block 433. This tape former leads to a vertical channel or opening 433a extending through the block 433. Cooperating with the U-shaped former 434 is a blade 437 which fits within the U-shaped member 434 and is of sufficiently reduced dimensions to provide a U-shaped guideway between members 434 and 437 through which the tape or web 428 is drawn and by which the tape is gradually formed into a two-ply stringer or carrier. This blade member 437 is pivotally mounted at 438 in the open throat of former 434 and is held in upright spaced relation to the U-shaped former by means of thumb screw

the walls of members 434 and 437. By removing the thumb screw 438 the blade 437 can be moved outwardly on its pivot 438 into position to facilitate the ready insertion of the tape or web through the former 434.

Immediately below the lower end of the tape-forming blade 437 the once folded tape is engaged by cooperating male and female bead forming rollers, see Figure 39, Sheet 16 of the drawings. A pair of relatively small peripherally grooved rollers 440 and 441 are freely journaled in a forked triangular carrying frame 442 which is presented in tape-guiding channel 433a above referred to; said frame 442 being pivoted at 443 upon the inwardly presented ears or lugs 444 of a floating plate 445 which has secured to its outer face a U-shaped bracket 446 to which is pivoted at 447, a cam lever 448 having a heel 449. Rods or bolts 450 anchored in the block 433 project through openings in the ends of plate 445 which guides thereon, said rods supporting coil springs 461 confined by adjustable thumb nuts 452 threaded upon the rods or bolts. The plate 445 rests upon the edge of plate 453 which is secured to an inclined face or surface of block 433 adjacent to channel 433a. The heel 449 of the cam lever 448 is designed to engage an inclined wearplate 453 and by its action move the plate 445 carrying member 442 and rollers 440 and 441 outwardly away from the opposite cooperating fixed roller 454 journaled at 455 in a slot or recess formed in the block 433. The frame 442 carrying the peripherally grooved rollers 440 and 441 presents these rollers on the inside of the fold of the tape or web as it passes below the former 434, 437. The roller 454 has a sharp convex periphery which engages the outer face of an apex of the fold of the tape or web just opposite the first roller 440 and reverses the crown of the fold into the V-shaped periphery of roller 440 having the effect of producing a double or M-shaped fold, which is continued and creased in this form by the cooperation of the lower roller 441.

Immediately below the folding rollers 440, 441, and 454 the once folded tape, having the thickened or twice folded beaded edge, passes into the grip or bite of two oppositely arranged cooperating pressure rollers 456, each of which is freely journaled between the ears 457 of a sliding block 458 operating in a transverse channel 459 of block 460 which is secured beneath the block 433 by means of screw bolts 461. This block 460 has a guide slot 460a extending through it and forming an extension of the guideway 433a of block 433, the rollers 456 being arranged to engage the folded and beaded tape or web in line with said guideway. The outer ends of block 458 are recessed at 462 to fit over and guide upon plates 463 which are secured to blocks 433 and 460 and extend across the channel 459. A centrally perforated plate 464 is secured to the outer end of block 458 outside of the guide plate 463, a guide rod 465 being seated in the plate 463 and extended through the central opening of plate 464 and supporting the coil spring 466 which is engaged by a thumb nut 467 threaded on the outer end of guide rod 465. This arrangement is duplicated on both sides of the channel or passageway for the folded tape or web, the springs 466 pressing the rollers 456 tightly together upon the folded tape or web and effectively compressing the four-ply twice folded beaded

The roller carrying blocks 458 are also formed with transverse grooves 468 in their upper faces. In the vertical plane of these grooves 468, the block 433 is provided with cylindrical sockets 469 in which are journaled the cylindrical heads 470 having upon their outer ends the operating levers 471 and upon their inner ends the eccentric lugs or pins 472 which engage in the transverse grooves 468 of blocks 458. These heads 470 are formed with annular grooves 473 in which engage the reduced inner ends of screw bolts 474 threaded in suitable openings in the block 433. These screw bolts 474 lock the rotary heads 470 in place while permitting them to rotate. It will be understood that by actuating the hand levers 471 the blocks 458 can be moved outwardly to separate the rollers 456. A half revolution of the heads 470 will place the eccentric lugs or pins 472 in position to hold the rollers in separated released position against the action of their springs.

475 and 476 are cooperating downwardly extending tape-guiding plates formed with ribbed inner faces to prevent backward movement of the folded tape. In addition to the transverse ribs or downwardly inclining teeth, plates 475 and 476 are vertically grooved or channelled on their inner faces adjacent the front edge to accommodate the four-ply beaded or thickened edge of the folded tape or web as shown in Figures 40 and 42. These plates 475 and 476 are formed integral with horizontal slotted ears 477 through which extend machine screws 478 which are threaded into the bottom of block 460. These plates 475 and 476 are slidably mounted in the manner described and are engaged by pressure springs 479 encircling screw rods 480 mounted in the plates 475 and 476 and passing freely through flanges 481 of bracket members 482 secured to the bottom of block 460 and assisting in guiding the ears 477 of plates 475 and 476. The screw rods 480 are engaged outside of flanges 481 by threaded nuts which can be adjusted to limit the approach of plates 475 and 476 together upon the folded tape or web and therefore limit the pressure of said plates upon the tape or web.

The lower ends of plates 475 and 476 are cut back or reduced in thickness as shown at 483 in Figure 38 of the drawings to receive the ends of the plungers carrying the clenching devices which compress the yokes of the fastener-members upon the beaded or thickened edge of the tape or web.

Mechanism for mounting fastener-members upon the beaded folded tapes or stringers

Upon each side of the path of the folded tape or web is mounted a horizontal guideway member 484 in which operates a reciprocating plunger 485, engaged at the rear by coil spring 486 confined by a plate 487 secured to the guideway 484. Each of the plungers 485 is formed on its inner end with three spaced lugs 488, the two plungers being designed to fit over and engage the yoke ends of attached spaced fastening-members.

Each plunger 485 also carries an inner auxiliary plunger indicated at 489 which carries at its inner end a clenching blade or tool 490. This auxiliary plunger 489 carrying the clenching tool 490, operates in a guideway 491 of the main plunger body 485 and upon the opposite side of the plunger 485 is a corresponding slot or guideway 492 in which operates a guide block 493 connected with the auxiliary plunger 489 by means

of a screw bolt 494 which supports between auxiliary plunger 489 and guide block 493 an anti-friction roller 495, see Figures 52 and 53, Sheet 19 of the drawings. This roller 495 is presented in the same vertical plane as the central longitudinal guideway or slot 496 of the main plunger 485.

The rear end of each plunger 485 is covered by a rectangular plate 487 secured by means of a screw bolt 498 passing through the plate 487 and an integral web portion of the plunger 485, the bolt being secured by a nut 499 on its inner end. This plate 487 affords a proper seat for the engagement of spring 486 above referred to.

The opposite guideways 494 are rigidly secured to the back face of the vertical web or plate 425 by means of screw bolts 500. Centrally between these bolts 500 is a headed bolt 501 threaded through the web 425 and secured by a nut 502, this bolt 501 being supported with its head in rear of the lower cut away portions of the tape engaging plates 476 and 478 and acting as an anvil or back support for said plates during the operation of clenching fastener-members upon the exposed beaded or thickened edge of the folded tape or web. 503 are face plates secured to the guide blocks 494 and holding in place therein the plungers 485.

Cam-bars 504 extend vertically through the guide slots 498 of plungers 485 and through the vertical guideways 505 of guides 484, said cam-bars 504 being formed near their upper ends with cam-slots 506 which embrace and operate upon the anti-friction rollers 495 of auxiliary plungers 489, for actuating the main plungers 485 and auxiliary plungers 489.

The guideway members 484 are rigidly mounted upon the base of the web or plate 425 between two bars 507 and 508 set in grooves in the plate 425 and secured by means of machine screws 509.

The lower ends of the tape-guiding members 475, 476 are of the same depth from front to rear as the main portion of these guides, the longitudinal cut-out at 510 being deeper to receive the fastener-members which are clamped upon the beaded edge of the tape or web within the cut-out portion of said guides 475, 476.

Arranged below the lower ends of members 475, 476 are two closely aligned guide plates 511 formed with deep longitudinal guide grooves 512 in which the prongs of the fastener-members project and thin spaced flanges 513 which engage the narrow neck portions of the fastener-member as the fastener-members clamped upon the folded tape or stringer pass downwardly. These guide plates 511 are supported at their upper ends upon the lower ends of members 475 and 476 by means of machine screws 514 and are connected at their lower ends by a bridge plate 515 which maintains them in proper parallel relation. A U-shaped plate 516 is connected to the inner ends of guideways 484 and overlaps the face plates 503 and the connecting overlapping upper ends of guide plates 511, said plate 516 thereby firmly connecting and bracing these parts of the structure.

Tape-feeding mechanism

The tape or web is drawn through the folding and fastener-member applying devices by a step-by-step feeding mechanism which engages the folded beaded tape immediately below the point of application of the fastener-members and directly in rear of the guide plates 511 which engage and guide the series of fastening-members that have been clamped upon the beaded

edge of the folded tape. This feeding mechanism includes cooperating gripper-members operated by the vertically reciprocating cam-bars 504 above referred to.

5 The cooperating gripper bars are clearly shown at 516a in Figures 38 (Sheet 15), 39, 39a, 41 (Sheet 16), 49, 50 (Sheet 18), 51 (Sheet 19), and 54 (Sheet 20) of the drawings. Each gripper-member 518a is formed with an inner transversely grooved gripper face 517 and a vertical recess or cut-out 518 to accommodate the fastener-members upon the beaded edge of the tape. The longitudinal slots 519 in bars 518a permit the passage of the cam-bars 504, each of said slots housing an anti-friction roller 520 freely journalled upon a transverse bolt or pin 521 and said anti-friction roller 520 being also seated in a cam slot 522 of a cam-bar 504. A stud 523 projects from the outer end of each gripper bar 516a in engagement with the slotted upper end 524 of a lever 525 which is formed with an inwardly turned fulcrum nose 526 resting in engagement with the block 527. There are two of these levers 525, one on each side of the gripper mechanism and they are connected by a heavy coil contractile spring 528 acting through headed rods 529 passing through openings in levers 525 and one of said rods being provided with screw nuts 530a engaging the threaded ends of said rod whereby the tension of spring 528 can be adjusted.

Each of the cam-bars 504 is enclosed for a part of its length including the slot 519 by a bearing block 530 shown particularly in Figures 38, 39, 41, and 55. The bearing block 530 is confined upon the cam-bar 504 by means of plates 531 secured to the opposite faces of bearing block 530 by means of machine screws 532 and having integral inturred flanges 533 which extend over the upper corners of one of the gripper bars 518a and confine said gripper bar upon the upper edges of bearing block 530. From this construction it will be understood that the cam-bar 504 will slide freely through the bearing block 530 within the limits of the engagement of the ends of slot 522 with the anti-friction roller 520, the gripper bar 516a moving transversely with reference to cam-bar 504 when this relative movement takes place. The two bearing blocks 530 are connected in proper spaced relation by means of a bridging bracket 534 secured by means of screw bolts 535. These bearing blocks 530 are shaped on the outer vertical edges to fit groove trackways 536 formed on the inner faces of plates 527 rigidly secured to the depending side flanges 538 of the movable frame of tape former. A stop plate 539 is secured to the plate 527 and formed with a forwardly presented recessed end having spaced stop lugs 540 between which operates a stop lug 541 carried by bracket 542 secured to the bridge piece 534 above referred to, see Figures 6 and 7 of the drawings. The lower stop lug 540 at each side has threaded through it an adjustable stop screw 543 for determining the lower limit of the movement of bridging piece 534 and the parts connected therewith.

544 is a block rigidly mounted in the recessed face of plate 527. This block 544 has pivotally mounted at 545 a latching dog 546 having a laterally presented notch 547 at its upper end engaged by a leaf spring 548 secure to the block 544; said block 544 also carries a keeper dog 548 pivoted at 550 opposite the latching dog 546, and engaged by a leaf spring 551 attached to block

to receive dogs 546 and 549 and to permit them to operate. Each of the gripper bars 516a is provided on its upper face near its outer end with a rigidly attached strip 552 which projects toward the rear to form a stud designed to be engaged by the latching dog 546 and the keeper dog 549. It will be understood that a latching device such as described is provided at each side, one for each of the gripper bars 516a. The purpose of these latching devices is to hold the gripper bars against vertical displacement while the cam-bars 504 are moving vertically through the gripper bars so as to ensure the movement of the gripper bars either inwardly into gripping position with the folded tape or outwardly to release their grip upon the tape, it being essential in initiating either of these movements that the engagement or disengagement of the grippers must be effected before the grippers are moved vertically.

The lower end of each cam-bar 504 has attached to it a connecting yoke 553 which is pivotally connected at 554 with a pitman 555 adjustably connected at its lower end with a yoke 556 journalled upon the reduced end 557 of a short axle 558 which is carried in the notch or recess 559 adjacent to the upper end of a vertically sliding bar 560. A thumb screw 561 is threaded through the bar 560 into the axle 558 for retaining it rigidly in place. The open end of recess 559 is normally closed by a spring pressed gate 562. In this way the axle 558 is rigidly mounted upon the bar 560. There are two pitmen 555, one projecting downwardly from each of the cam-bars 504 and these pitmen are journalled upon the opposite reduced ends of the short axle 558. The bar 560 reciprocates freely in the vertical guideway 563 of arm 564 having a hub 565 which is rigidly mounted upon a fixed shaft-like support 566 mounted horizontally in the bracket-bearings 567 and 568. Freely journalled upon the dead shaft 566 adjacent to the guide arm 564 is a rotary tubular shaft 569 upon which is secured box cam 570 engaging an anti-friction roller 571 journalled on stud 572 projecting from the face of the vertically reciprocating bar 560. Rotary tubular shaft 569 also carries a driving sprocket wheel 573 over which operates a sprocket chain 574 extending from and driven by a sprocket 575 fixed to the inner face of a large gear wheel 576 which is freely journalled upon the end of the main cam-shaft 25 alongside of one of the bearings 26. This large gear wheel 576 carries one of a pair of clutch members for locking the gear to the cam-shaft when it is desired to rotate the cam-shaft; said gear 576 being, however, normally free to rotate on the cam-shaft and form an element of the drive from the power shaft to the feed mechanism for the tape-folding and feeding and associated devices. This large gear 576 meshes with and is driven by a smaller gear 577 freely journalled upon a stub shaft 578 secured to the machine frame by the bracket plate 579 and braced at its outer end by the bracket 580. The small gear 577 is firmly secured to and rotates with a large combined fly-wheel and driving sprocket 581, also journalled upon stub shaft 578, which in the form shown has a circle of sprocket teeth set centrally in its periphery over which operates a sprocket chain 582 which operates around and is driven by a sprocket wheel 583 mounted upon a shaft 584 suitably journalled in bracket-bearings 585 and 586. This shaft 584 carries at its inner end a gear wheel 587 meshing with and driven by a smaller gear wheel 588 keyed to the

Operation of cam-bars upon the fastener-mounting plungers and the tape-feed grippers

A comparison of Figures 38, 49, 50, and 51, illustrating the slotted cam-bars and mechanism actuated by them in various positions, will lead to a clear understanding of this part of the machine.

It will be observed from the illustrations in the figures of the drawings mentioned, that the cam slots 508 which operate the fastener-member applying plungers are so arranged in the cam-bars 504 that the upward movement of the cam-bars causes the plungers 485 and 489 to move inwardly for performing their functions and the downward movement of the cam-bars withdraws these plungers into their inactive position. The cam slots 522, lower down upon the cam-bars 504, are arranged in exactly the reverse positions so that the initial upward movement of the cam-bars moves the gripper bars 516a outwardly into released position to permit the raising of the gripper bars upon the tapes or stringers for a new grip, while the initial downward movement of the cam-bars moves the gripper bars inwardly to grip the folded tape or stringer preparatory to feeding it a step downwardly.

In Figure 49 the cam-bars 504 are shown on their upward move, the feed gripping bars 516a having been drawn apart to release the tape and the fastener-member mounting plungers 485, 489 being partly moved inwardly, the reciprocating frame which supports the tape folding and associated members being at the moment moving toward its inner position to place the beaded edge of the folded tape in the open jaws of the fastener-member that is held by the carrier gripper 339, 341 to receive the tape, as shown in Figure 52, Sheet 19 of the drawings. In Figure 50 the upward movement of the cam-bars is being completed, the fastener-member being in the act of being clenched by the plungers 489. The completion of the clenching operation upon a fastener-member is shown in Figure 53, Sheet 19 of the drawings. It will be noted that in Figure 49 the projecting ends of the strips 552 of gripper bars 516a have moved out of engagement with the latching dogs 546 and have pressed back the keeper dogs 549 so that the gripper bars 516a can move upwardly with cam-bars 504 as they have started to do in the position shown in Figure 50. In Figure 51 the cam-bars 504 have started to move downwardly, the fastener-member applying plungers 485, 489 having been partly withdrawn and moved outwardly, while the gripper bars 516a have started to move inwardly to grip the folded tape. In Figure 38 the change of position of the parts is shown complete in that the plungers 485, 489 are completely moved outwardly and the gripper bars 516a are in their inner position gripped upon the tape and latched to the carrier frame in which the cam-bars are mounted by reason of the strip members 552 having moved into engagement with the latching dogs 546. In this position the cam-bars 504 are moved down to a complete feeding stroke, the grippers 516a carrying the folded beaded tape with an applied fastener-member one step downwardly to present a new beaded section of the tape in the proper horizontal plane for receiving the next succeeding fastener-member. As this tape feeding operation is completed the frame or carriage which supports the tape mechanism and associated devices is moved forwardly away from the path of the fastener-member-carrier which is immediately afterward re-

turned to the member cutting-off position for gripping another fastener-member.

Stringer cut-off mechanism

The tape or stringer with fastening-members clamped to its beaded or thickened edge passes from the intermittent feed mechanism into a rectangular funnel shaped guide 589, the throat of which is contracted into a rectangular guide tube 590 which terminates just above a pair of cut-off shears which will now be described with particular reference to Figures 6 and 7 (Sheets 5 and 6 respectively), and 57 and 58 (Sheet 21) of the drawings. The shears proper comprise two cutter-blades 591, 592 pivotally mounted upon a bolt 593 which extends downwardly through a bracket plate 594 which is supported upon a machine end frame beneath the table 5. A spacing collar 595 is mounted upon the bolt 593 between the bracket plate 594 and the cutter blades 591 and 592, the blades being supported thereon by means of a nut 596 threaded upon the reduced end of bolt 593. The headed end of bolt 593 confines a coil expansion spring 597 against bracket 594 for yieldingly pressing cutter blades 591 and 592 together. The guide funnel 589 with tubular extension 590 is supported by bracket plate 598 secured to the plate 594 by set screw 599. The cutter blades 591 and 592 have outwardly extending bell-crank arm 600 to which are pivotally connected the links 601 in turn pivoted at 602 to the yoke 603 mounted upon a reduced end 604 of a solenoid core or bar 605, said reduced end having sliding bearing in a bushing 606 carried by bearing block 607 depending from the bracket plate 594. A spiral expansion spring 608 also surrounds the reduced portion 604 of the core or bar 605 and is confined thereon against the bearing block 607 by means of a head or disk 609 secured to the end of bar 604. This disk or head 609 engages the rounded heels 610 of the cutters 591, 592. A cushioning washer 611 is mounted upon reduced end 604 between yoke 603 and bearing block 607. A solenoid magnet 612 is mounted in a suitable frame 613 of which bracket arms 614 are secured to the under surface of plate 594. This magnet 612 has a central cylindrical chamber 615 in which is mounted a fixed core 616 toward and away from which reciprocates the movable core 605. The fixed core 616 serves as a stop for the inward movement of the movable core 605 when it performs the cutting operation. The circuit through solenoid 612 is controlled through the terminals 617 (shown in Figure 83, Sheet 27 of the drawings), by the automatic initiative control mechanism hereinafter described, it being understood that in the operation of the machine it is intended to feed the folded beaded tape for a required length and apply a predetermined number of fastener-members thereon and follow these measured operations by the action of the cut-off shears which sever the completed stringers in the desired lengths. As the lengths of stringers are severed by the shears they drop into an inclined chute 618 mounted upon the bracket-arm 619 and extended to one side to deliver the completed stringers into a convenient receptacle.

Cam-shaft driving mechanism

Referring to Figures 3 and 4 (Sheet 4) and 68, 69, and 70 (Sheet 24) of the drawings, it will be observed that the gear 576 is formed in its outer face with a shallow cylindrical recess 620 in which is seated a hardened metal disk 621 secured by

screws 622, said disk being formed with an axial opening 623 in which engages the heavy dog 624 secured by screws 625 to a collar 628 which slides upon a squared portion 627 of the cam-shaft 25. When collar 626 is in its inner position against disk 621 as shown in Figures 4 (Sheet 4) and 68, (Sheet 24) of the drawings, the gear 576 is clutched upon the cam-shaft for driving it. The outer end of cam-shaft 25 carries a stout coil-spring 628 confined against the collar 626 by the collar 629 fastened to the shaft by screw 630. The action of the spring 628 is to move the dog 624 into clutching engagement and hold it in this operative position until it is positively disengaged by the clutch controlling devices which will now be described.

Pivotaly mounted at 631 upon a part of the bracket plate 583 is a clutch controlling lever 632 having a bevelled blade 633 which when moved inwardly toward the shaft 25 will be presented in the path of the inclined cam face 634 formed in the dog supporting collar 626. When lever 632 engages collar 626 while the shaft 25 and gear 576 are rotating in clutched condition, the collar 626 will be forced outwardly against the action of spring 628 and thereby release the cam-shaft while the gear 576 continues to rotate.

The clutch operating lever 632 is formed with a bell-crank arm 635 to which is pivoted at 636 a link 637 pivoted at 638 to a head 639 secured to the upper end of a vertically movable controlling rod 640 which extends downwardly and terminates as a movable core in a solenoid magnet 641 mounted in the frame 642 suitably secured to bracket plate 643 extending from the base frame of the machine. This controlling rod 640 passes through a perforated bracket arm 644 projecting from and secured to the bracket 580 of the machine frame. An expansion coil spring 645 is confined upon rod 640 between the bracket 644 and the head 639 to give a spring tendency to throw the clutch controlling lever 632 upwardly and hold it in that position with the clutch disengaged. This rod 640 is moved downwardly against the action of spring 645 when it is desired to cause the clutch dog 624 to move inwardly into clutched position.

The rod 640 can be moved either automatically by an electric control acting through the solenoid 641 (see control circuit Figure 83, Sheet 27 of the drawings), in the manner that will be hereinafter explained, or mechanically through the hand operated lever 646, secured to a rod or shaft 647 which is journaled in the machine frame and carries upon its outer end a rock-arm 648 having a loose joint pivotal connection 649 at its end with a block 650 adjustably secured to the rod 640. By moving the hand lever 646 rod 640 can be pulled downwardly to permit the clutch 623, 624 to move into action for causing the rotation of the cam-shaft 25.

In the electrical automatic operation of the clutch (see Figures 3 and 4, Sheet 4, and Figure 83, Sheet 27 of the drawings), an auxiliary electromagnet 651 mounted upon a bracket plate 652 extending from the solenoid frame 642 acts upon a keeper plate 653 of a hook lever 654 pivoted in the bracket 655 in position to normally engage a tappet block 656 which is adjustably mounted upon the controlling rod 640. The face of tappet block presented toward the hook lever 654 is bevelled slightly to freely pass the hook end of the lever when it is moved downwardly from its upper position. In this construction it

will be understood that when an electric impulse is passed through the solenoid magnet 641 through the automatic initiative control hereinafter explained, the rod 640 will be drawn downwardly, permitting the clutch on the cam-shaft to move into clutched position, and the tappet 656 will move down past the hook lever 654 and be engaged thereby to latch the clutch controlling rod 640 in its lower position. It should be mentioned that the hook lever 654 is provided with a heel 654a carrying a leaf spring 654b which engages the bracket plate 652 to give the lever 654 a spring tendency away from the magnet 651 toward the tappet block 656 with which it latches.

The machine is preferably driven by an electric motor indicated at 657 firmly secured to the base of the machine frame, see Figures 1 and 83 (Sheets 1 and 27 respectively) of the drawings. The motor-shaft 658 is aligned with the main power shaft 204 above referred to, the adjacent ends of these shafts carrying the driving and driven clutch members 659, 660 of any approved construction. The details of this main clutch are not illustrated in the drawings, but a sliding clutch actuating collar 661 is shown upon shaft 204 connected through arm 662 with the driven or movable clutch member 660. Collar 661 is operated by rock-arm 663 extending up from the rock-shaft 664 journaled in bearing brackets 665 and carrying at its opposite end a long manually operated clutch-operating lever 666 which is placed in convenient position for the operator.

Automatic initiative controlling mechanism

In addition to the electromagnetic operation of the cut-off shears and the clutch of the cam-shaft through electromagnets 612, 641, and 651, there is an electrically operated counter mechanism 726, Figure 83 (Sheet 27) of the drawings, which determines the number of completed articles produced by the machine and, upon the arrival of the predetermined quantity, shuts off the operation of the machine preferably by throwing out the main circuit switch. This counter mechanism may be of any approved form, but is preferably of the construction set forth in Patent No. 1,685,481 dated September 25, 1928. The operation of this counter-mechanism is by electrical impulses, imparted through a suitable current reducing relay initiated by one of a plurality of controlling switches which are automatically actuated by the operation of the machine.

Mounted on the bracket 667 secured to the upright angle bar 668 of the machine frame is an insulated plate 669 formed in its inner face with a shallow longitudinal groove or channel 670. Embedded in the bottom of this channel 670 are four contact members 671, 672, 673, and 674, (or more if desired for additional controls) which are connected respectively through suitable insulated wires and current reducing relays 671a, 672a, 673a, 674a with the clutch-solenoid 641, clutch electromagnet 651, the shear-solenoid 612 and the operating magnet 727 of the mechanical counter 726, see Figure 83, Sheet 27 of the drawings. Hinged at 675 to the insulated plate 669 is an insulated cover plate 676 carrying on its outer face the bracket 677 in which is mounted a pivot shaft 678 supporting the spaced electrically connected contact levers 679 which are formed with inwardly presented noses 680 which project through elongated slots 681 in vertical alignment respectively with the several contacts

671 to 674. Leaf springs 682 are secured to the block 676 and engage the heels of contact levers 679, one spring being for each lever. A latch 676a pivoted upon upright 668 engages cover plate 676 and holds it closed. When it is desired to swing the plate 676 into open position, latch 676a is moved back against stop screw 676b, see Figures 1 (Sheet 1) and 60 (Sheet 22) of the drawings. The circuit wire 683 connects with one of the levers 679 and through the supporting pivot 678 electrically connects the whole series of contact levers, with the four relays 671a, 672a, 673a and 674a, as shown in Figure 83, Sheet 27 of the drawings.

The circuit wires from the several contacts 671 to 674 and from the contact levers 679 are formed into a cable indicated at 684 which passes to a convenient part of the machine frame where it enters a box 685 designed to support the proper relays of well-known construction from which wires lead through the several controlling magnets above referred to.

Passing down through the shallow channel 670 of the insulated plate 669 and beneath cover plate 678 is an endless band 686 of suitable insulating material which normally separates the noses of levers 679 from the contacts 671 and 674. This band 686 may conveniently assume the form of a ribbon or web of fireproof and insulating material such as used for a film in a moving picture machine in which case the band has a series of accurately spaced sprocket perforations 687 operating over the sprocket pins 688 of the spools 689 freely journaled upon pins 690, one spool 689 being mounted above and another spool 689 being mounted below the insulated plate 669 and 676 between which the controlling film 686 passes. The band 686 being endless passes from the lower spool 689 up over a guide spool 691 journaled on a pin 692 which is adjustably mounted in the vertical slot 693 of the upright angle bar 668, said journal pin being secured in the desired adjusted position by means of a thumb nut 694 threaded upon the inner end of pin 692. The endless band 686 passes from the spool 691 down around the first named sprocket spool 689, the band being also engaged, between spools 691 and 689, by a flanged tightener spool 695 mounted upon a pin 696 carried in the end of an arm 697 pivoted at 698 in the upright angle bar 668 and formed with a transverse slot 699 which receives a bolt 700 upon which is threaded a thumb nut 701,—the bolt passing through an opening in upright 668 and the slot in the tightener arm 697.

This endless controlling band 686 is formed at proper predetermined intervals with slits or openings indicated at 702, 703, 704 and 705 which it will be observed are respectively in the same longitudinal zones as the contacts 671, etc., so that, upon the arrival of a perforation in the band between a contact and a contact lever, an electric impulse will be sent through the circuit thus closed for effecting the desired action depending upon the magnet circuit affected. Bearing in mind that these contacts 671 to 674 lead to the several controlling magnets, it will be understood that the arrangement of the controlling perforations 702 to 705 in the controlling band will depend upon the result desired. This will be more fully explained in connection with the description of the operation of the machine, but in passing it may be noted that closing the circuit through contact 671 throws in the clutch upon the cam-shaft 25 to cause the cam-shaft to

rotate, with the result that fastener-members are produced by the presses Nos. 1, 2, 3, and 4 and passed to the point of attaching them to the beaded edge of the tape or stringer; an electric impulse through contact 672 releases the latch-lever 654 to throw out the clutch on the cam-shaft with the result that the cam-shaft will stop rotating and no more fastener-members will be made until it is again started, during which period of idleness of the cam-shaft, the rest of the machine will continue to operate with the result that an excess or blank part of the folded tape or stringer will be produced after the completion of the mounting of a group or series of fastener-members; and when an electric impulse is passed through contact 673 the cut-off shears will be operated for severing the web a spaced length after the completion of a group of fastener-members; while the final contact 674 sends an impulse to the magnet 727 of the mechanical counter at the completion of each stringer, so that said counter will be able to ultimately stop the complete machine by throwing out the main circuit switch when the required number of stringers of the desired length and number of fastener-members has been delivered.

In the plan of operation of the machine shown diagrammatically in Figure 83 (Sheet 27) of the drawings, the mechanical counter 726 closes the electric controlling circuit at 728 which energizes magnet 729 which pulls open the main circuit switch 730 which cuts off the current to the motor 657 through rheostat 731 and thereby stops the machine. As the current is cut off from rheostat 731 the deenergizing of the magnet 732 of the rheostat releases the rheostat arm 733 to permit its usual spring (not shown) to move it to neutral position, where it engages contact lever 734 and breaks the control circuit in which are included the electromagnets and the relays hereinbefore referred to.

It will be understood that the controlling insulated endless band 686 must be driven in a step-by-step manner, one step for each revolution of the machine. This is accomplished by providing the lower sprocket spool 689 with a sleeve 706 carrying a ratchet wheel 707 which is normally engaged by a retaining spring-pressed dog or pawl 708 pivoted to upright 668 upon stud 709. This ratchet wheel 707 is also engaged and driven by a pawl or dog 710 pivoted at 711 to a reciprocating bar 712 mounted upon a plate 713 surmounting a bracket 714 of the machine frame. This bar 712 is confined by the guide brackets 715 and 716 secured to the plate 713 in spaced relation to permit the projection laterally from both sides of bar 712 of a rod 717, which rod is engaged at its ends by coil springs 718 attached to the sides of bracket 715. The springs 718 yieldingly hold the pawl-carrying bar 712 toward the left or away from the ratchet wheel 707, said bar 712 having a bifurcated end 719 in which is freely journaled an anti-friction roller 720 supported in the path of a cam member 721 fastened to the periphery of the rotary sleeve 569 so that once for each revolution of the sleeve the bar 712 carrying pawl 710 will receive an impulse and move the endless band 686 upon the sprocket spools 689 one step, which, as a matter of preference, is the distance between two fastener-members on the beaded tape. The pawl or dog 710 is yieldingly held in engagement with the ratchet wheel 707 by means of a leaf spring 722 fastened to the bracket guide 716. As shown in Figures 2a (Sheet 3), 3 (Sheet 4) and 61 (Sheet 75

23) of the drawings, a latching bar 723 having notch 724 is pivoted at 725 to upright frame piece 668 in position to engage rod 717 and hold bar 712 in its retracted position when it is desired to arrest the operation of the automatic initiative control.

In several of the figures of the drawings showing the flexible web or stringer the same has been indicated by the reference numeral 429 whatever stage the webbing may be in and the completed fastener-members after being cut from the continuous strip are indicated by the reference numeral 43x, whether said members are in the grippers of the carrier or are clamped in final position upon the beaded edge of the tape or stringer 429.

The machine has been designed to produce stringers for flexible closures having the essential features of patents hereinbefore referred to, but it should be understood that many features of the improved automatic machine may be employed for producing other forms of stringers for flexible closures.

General operation

The operation of the various mechanisms combined in the improved machine to produce the desired results have been individually explained in connection with the foregoing structural description so that a brief reference only will be made to the general operation of the machine.

It will be clear from the foregoing description that the several presses operate successively upon a continuous metal strip-blank which is fed in a step-by-step manner, one step of the width of a fastener-member for each revolution of the machine.

While the successive presses are acting upon the metal blank to produce fastener-members of the form above described, the tape-forming mechanism is at the same time acting upon a continuous web of tape which is doubled into two-ply and formed at its folded longitudinal edge with a four-ply beaded or thickened portion.

When the feed of the metal strip-blank is taking place by the action of press No. 1, assisted by the auxiliary feed as has been explained, all the other presses are raised and out of contact with the work.

Immediately following the feed of the strip-blank by press No. 1 and the auxiliary feed, press No. 2 comes into action, does its work, and remains in engagement with the work until after press No. 1 has released its hold upon the work and returned to its initial position. Press No. 2 and the preliminary clamp and guiding rolls cooperate in holding the strip-blank against movement while the press No. 1 releases the strip and returns to its initial position preparatory to another feeding stroke. The clamp is normally in engagement with the metal strip-blank and is disengaged therefrom only while press No. 1 is feeding the blank.

Completed metal fastener-members are taken from press No. 4 and moved over to position to be clamped upon the beaded edge of the formed tape or stringer. The fastener-member-carrier returns to take a fastener-member just as the feed of the metal strip-blank is completed, and just prior to said carrier reaching its position to receive a new member, press No. 4 starts to operate; its first operation being to cause its pilot member to engage a perforation of the metal strip to accurately position the fastener-member that

is to be cut off, then to actuate the gripper of the carrier to cause it to grab and firmly hold the projected fastener-member, and finally to cut off the grabbed fastener-member and cause the release of the auxiliary feed from the metal strip. These last two actions of cut-off and releasing the auxiliary feed take place about the same time.

The carrier with the gripped fastener-member moves away from press No. 4 into position for clamping the member upon the tape, and when it reaches this position in the vertical transverse plane of the beaded tape, the carriage which supports the tape folding mechanism is given a quick movement toward the fastener-member which is rigidly supported by the gripper with its open yoke presented forwardly. This movement carries the beaded edge of the folded tape into the open yoke of the fastener-member and, as the movement is completed, the clencher bars clamp the yoke of the fastener-member upon the beaded edge of the tape or stringer.

These operations are repeated once for each revolution of the machine, the successive fastener-members being properly spaced upon the beaded tape or stringer by the mechanism described including the step-by-step feed mechanism. The required number of fastener-members having been applied to the tape or stringer, the mechanism for forming the fastener-members is thrown out of action by the initiative automatic control above described acting to throw out the clutch upon the cam-shaft,—the feed of the tape continuing while the production and mounting of the fastener-members is continued,—there will be a blank portion of tape succeeding a group of fastener-members. When this blank part of the tape is of the desired predetermined length, the cam-shaft is again automatically thrown into action to continue production and mounting of the fastener-members, this resumption of operation of the cam-shaft being effective through the initiative control in the manner already explained. Following the continued mounting of fastener-members upon the tape the tape cut-off is actuated at the proper moment to sever a blank portion of tape midway between two groups of fastener-members and a severed complete stringer is discharged by the chute 618. This production of stringers that are uniform in length, number of fastener-members and their blank ends is continued automatically by the machine until, as above explained with reference to Figure 83 (Sheet 27) of the drawings, the mechanical counter 726 has recorded the required number of completed stringers when, through the electrical controls explained, it will automatically shut off the operation of the machine.

We claim:—

1. In a machine for making separable fastener stringers, the combination with means for forming a beaded carrier or stringer, of means associated therewith for clamping fastener-members thereon.

2. In a machine for making separable fastener stringers, the combination with means for forming a two-ply beaded carrier or stringer, of means associated therewith for clamping fastener-members thereon.

3. In a machine for making separable fastener stringers, the combination with means for forming a continuous beaded carrier or stringer, of means associated therewith for clamping fastener-members thereon.

4. In a machine for making separable fastener stringers, the combination with means for forming a continuous beaded carrier or stringer, of means associated therewith for intermittently clamping fastener-members thereon, and means also associated therewith for severing sections of the stringer.

5. In a machine for making separable fastener stringers, the combination with means for forming a continuous beaded carrier or stringer, and means for intermittently feeding said carrier or stringer, of means associated with said forming and feeding means for intermittently clamping fastener-members thereon.

6. In a machine for making separable fastener stringers, the combination with means for forming a beaded carrier or stringer, of means associated with said carrier forming and fastener member forming means for forming fastener-members, and means for clamping fastener-members upon the beaded carrier or stringer.

7. In a machine for making separable fastener stringers, the combination with means for supporting a carrier or stringer, of means for forming an integrally connected series of partially finished fastener-members including means for forming separate mounting yokes extending transversely of the series, means for feeding said fastener-members, means for separating from the series and completing individual fastener-members, means for supporting completed individual fastener-members, and means for clamping fastener-members upon said carrier or stringer.

8. In a machine for making separable fastener stringers, the combination with means for forming a beaded carrier or stringer, and means for feeding said carrier or stringer, of means associated with said carrier forming and feeding means for forming a connected series of partially finished fastener-members, means for separating from the series and completing individual fastener-members, and means for clamping fastener-members upon the beaded carrier or stringer.

9. In a machine for making separable fastener stringers, the combination with means for forming a beaded carrier or stringer, and means for feeding said carrier or stringer, of means associated with said carrier forming and feeding means for forming a connected series of fastener-members, means for severing individual members from said connected series, and means for clamping fastener-members upon the beaded carrier or stringer.

10. In a machine for making separable fastener stringers, the combination with means for forming a beaded carrier or stringer, of means associated therewith for forming a connected series of fastener-members having oppositely presented fastening hooks and U-shaped mounting yokes, means for severing individual members from the connected series, and means for clamping the U-shaped yokes of fastener-members upon the beaded carrier or stringer.

11. In a machine for making separable fastener stringers, the combination of means for folding a ribbon of flexible material into a two-ply carrier or stringer having a thickened folded edge, with means for clamping individual interlocking elements at uniform intervals upon the thickened folded edge.

12. In a machine for making separable fastener stringers, the combination of means for folding a ribbon of flexible material into a two-ply carrier or stringer having a thickened folded edge, with

means for forming individual interlocking elements, and means for clamping the individual interlocking elements at uniform intervals upon the thickened folded edge.

13. In a machine for making separable fastener stringers, the combination of means for folding a ribbon of flexible material into a two-ply carrier or stringer having a thickened folded edge, and means for imparting a step-by-step feed to said carrier or stringer, with means for forming a connected series of fastener-members, means for severing individual members from said connected series, means supporting individual fastener-members while they are applied to the carrier or stringer, and means for clamping fastener-members upon the thickened folded edge of the carrier or stringer.

14. In a machine for making separable fastener stringers, the combination with means for folding a ribbon of flexible material into a two-ply carrier or stringer having a four-ply folded edge, with means for clamping individual interlocking elements at uniform intervals upon the four-ply folded edge.

15. In a machine for making separable fastener stringers, the combination with means for folding a ribbon of flexible material into a two-ply carrier or stringer having a four-ply folded edge, with means for forming individual interlocking elements having U-shaped mounting jaws or yokes, and means for clamping the jaws or yokes of said interlocking elements at uniform intervals upon the four-ply folded edge.

16. Means for forming fastener-elements having tape receiving jaws, and means for firmly supporting individual fastener-elements, in combination with a carriage movable toward and away from said element supporting means, means for feeding a tape upon said carriage transversely of said element supporting means, means for forming a bead upon a tape, and means for clamping the individual fastener-elements upon the beaded edge of a tape.

17. Means for forming fastener-elements having tape receiving jaws, and means for firmly supporting individual fastener-elements, in combination with a carriage movable toward and away from said element supporting means, tape feeding means upon said carriage for feeding a tape transversely of said element supporting means, means for forming a bead upon a tape, means for clamping individual fastener-elements upon the beaded edge of a tape, and means for uniformly spacing the fastener-elements upon a tape.

18. Means for forming fastener-elements having tape receiving jaws, and means for supporting individual fastener-elements, in combination with a carriage movable toward and away from said element supporting means, means upon said carriage for supporting and feeding a tape transversely of said element-supporting means, means for longitudinally folding a tape and forming a bead upon its folded edge, and means for clamping individual fastener-elements upon the folded beaded edge of a tape.

19. The combination of means for supporting a fastener-element, with a tape carriage movable toward and away from said supporting means, tape folding mechanism mounted upon said carriage, mechanism to feed a tape at an angle to the movement of said carriage, and means for securing fastener-elements upon a tape.

20. The combination of means for supporting a fastener-element, with a tape carriage movable

toward and away from said supporting means, means mounted upon said carriage for forming a fastener retaining bead upon a tape, mechanism to feed a tape at an angle to the movement of said carriage, and means for securing fastener-elements upon a tape.

21. The combination of means for supporting a fastener-element, with a tape carriage movable toward and away from said supporting means, tape folding and bead forming mechanism mounted upon said carriage, mechanism to feed the tape at an angle to the movement of said carriage, and means for securing fastener-elements upon a tape.

22. The combination of means for supporting a fastener-element, with a tape carriage movable toward and away from said supporting means, tape folding and bead forming mechanism mounted upon said carriage, mechanism to feed the tape at an angle to the movement of said carriage, and means for clamping individual fastener-elements upon the folded beaded edge of a tape.

23. The combination of means for forming a connected series of fastener-members, means for severing individual members from said connected series, and means for supporting an individual fastener-element, with a tape carriage movable toward and away from said supporting means, means mounted upon said carriage for forming a folded plural ply fastener-retaining bead upon a tape, mechanism to feed a tape upon said carriage, and means for securing fastener elements upon a tape.

24. The combination of means for forming a connected series of fastener-members, means for severing individual members from said connected series, and means for supporting an individual fastener-element, with a tape carriage movable toward and away from said supporting means, means mounted upon said carriage for forming a folded plural ply fastener-retaining bead upon a tape, mechanism to feed a tape upon said carriage, means for securing fastener elements upon a tape, and mechanism for cutting off lengths from a tape.

25. The combination of means for intermittently feeding a flat blank strip, means acting upon said strip for forming a succession of fastener-elements including means for forming separate mounting yokes in the plane of said strip, means for severing successive fastener-elements from said strip, means movable toward and away from said fastener-elements adapted to grip a fastener-element and move it away, tape-supporting mechanism adapted to intermittently move a carrier tape toward a separately supported fastener-element, and means for clamping fastener-elements upon a carrier tape.

26. The combination of means for intermittently feeding a flat blank strip, means acting upon said strip for forming a succession of connected fastener-elements having oppositely presented hooks including means for forming separate mounting yokes from said strip, means for severing successive fastener-elements from said strip, a travelling gripper movable toward and away from said fastener-elements adapted to grip a fastener-element and move it away from the strip as it is severed therefrom, tape-supporting mechanism adapted to intermittently move a carrier tape toward and into the mounting yoke of a separately supported fastener-element, means for clamping fastener-elements upon the

carrier tape, and means for intermittently feeding the carrier tape.

27. The combination of means for intermittently feeding a flat blank strip, means acting upon said strip for forming a succession of connected fastener-elements including means for forming separate mounting yokes of the material of said strip, means for severing successive fastener-elements from said strip, a travelling gripper adapted to grip a fastener-element and move it away from the strip as it is severed therefrom, and tape-supporting mechanism adapted to intermittently move a carrier tape toward a separately supported fastener-element, and means for clamping the fastener-element upon the carrier tape.

28. The combination of means for supporting and feeding a flat blank strip, means acting upon said blank strip for forming a succession of connected fastener-elements having U-shaped clamping jaws formed of the material of said strip, means for severing successive fastener-elements from said strip, and means for supporting individual fastener-elements while they are applied to a carrier tape, with a carriage reciprocating in the plane of the blank strip, means for feeding the carrier tape upon said carriage transversely of the blank strip, and means upon said carriage for clamping a fastener-element upon the carrier tape when the tape is moved by its carriage into the U-shaped jaws of a fastener-element.

29. In a machine of the character described, the combination with means for forming a twoply flexible carrier or stringer with a thickened edge, and means uniformly feeding said flexible carrier or stringer, of means clamping fastener-members in spaced relation upon the thickened edge of said carrier or stringer, means supplying fastener-members to said clamping means, and means automatically arresting the supply of fastener-members to said clamping means without interfering with the uniform feed of said carrier or stringer.

30. In a machine of the character described, the combination with means forming a beaded carrier or stringer and means uniformly feeding said carrier or stringer, of means clamping fastener-members in spaced relation upon said carrier or stringer, means supplying fastener-members to said clamping means, and means automatically arresting the supply of fastener-members to said clamping means without interfering with the uniform feed of said carrier or stringer.

31. In a machine of the character described, the combination with means uniformly feeding a flexible carrier or stringer, and means for clamping fastener-members upon said carrier or stringer, of means for forming fastener-members, means conveying fastener-members into position to be clamped upon said carrier or stringer, and means for arresting said fastener forming means and said conveying means without interrupting the feed of the carrier or stringer.

32. In a machine of the character described, the combination with means for forming a flexible carrier or stringer, means uniformly feeding said flexible carrier or stringer, and means for clamping fastener-members upon said carrier or stringer, of means for forming a connected series of fastener-members, means for severing individual members from the connected series, means for conveying fastener-members

into position to be clamped upon said carrier or stringer, and means for arresting said forming, severing and conveying means without interrupting the feed of the carrier or stringer.

33. In a machine of the character described, the combination with feeding means for a flexible carrier or stringer, means for conveying fastener-members, means for clamping fastener-members upon said carrier or stringer, power driven mechanism for operating said carrier feeding means and said fastener conveying means, and an automatically controlled clutch between said power mechanism and said fastener conveying means, whereby the supply of fastener-members can be arrested and the feed of the carrier or stringer continued to produce blank portions thereon.

34. In a machine of the character described, the combination with feeding means for a flexible carrier or stringer, means for forming fastener-members, means for conveying fastener-members, and means for clamping fastener-members upon said carrier or stringer, of power driven mechanism for operating said carrier feeding means, said fastener forming means and said fastener conveying means, and an automatically controlled clutch between said power mechanism and said fastener forming and conveying means, whereby the supply of fastener-members can be arrested and the feed of the carrier or stringer continued to produce blank portions thereon.

35. In a machine of the character described, the combination with means for forming a flexible carrier or stringer, feeding means for said flexible carrier or stringer, means for forming fastener-members, means for conveying individual fastener-members, and means for clamping fastener-members upon said carrier or stringer, power driven mechanism for operating said carrier forming and feeding means and said fastener forming and conveying means, and an automatically controlled clutch between said power mechanism and said fastener forming and conveying means, whereby the supply of fastener-members can be arrested and the forming and feeding of the carrier or stringer continued to produce blank portions thereon.

36. In a machine of the character described, the combination with feeding means for a flexible carrier or stringer, means for forming fastener-members, means for conveying individual fastener-members, means for clamping fastener-members upon said carrier or stringer, power driven mechanism for operating said carrier feeding means and said fastener forming and conveying means, and an automatically controlled clutch between said power mechanism and said fastener forming and conveying means, whereby the supply of fastener-members can be arrested and the feed of the carrier or stringer continued to produce blank portions thereon.

37. In a machine for making separable fastener stringers, the combination with means for forming a continuous connected strip of fastener-members, including means for forming laterally and oppositely projecting fastener hooks and separate pairs of U-shaped clamping jaws, means for severing individual fastener-members from the strip, means for presenting individual severed members with their U-shaped jaws in stringer-receiving position, means for moving a carrier or stringer into said U-shaped jaws, and means for clamping said jaws upon the carrier or stringer.

38. In a machine for making separable fas-

tener stringers, the combination with means for moving a metal strip-blank step-by-step lengthwise, means for shaping said blank into a connected series of fastener-members arranged transversely of the blank, including means for forming separate pairs of U-shaped jaws along one edge and fastening hooks along the opposite edge of the blank, means for severing individual fastener-members from the strip, means for conveying individual members from said strip and presenting their U-shaped jaws in stringer receiving position, means for moving a carrier or stringer into said U-shaped jaws, and means for clamping said jaws upon the carrier or stringer.

39. In a machine for making separable fastener stringers, the combination with means for feeding a flat metal strip-blank, of means acting upon said blank to form a succession of connected interlocking elements for slide fasteners, and means for severing the connections between individual interlocking elements and forming from the severed parts of said connections integral riding lugs upon the separated interlocking elements.

40. In a machine for making separable fastener stringers, the combination with means for feeding a flat metal strip-blank, of means acting upon said blank to form a succession of connected side by side interlocking elements for slide fasteners having oppositely presented mounting jaws and fastener-members, and means for separating individual fastener-elements and forming thereon integral riding lugs.

41. In a machine of the character described, the combination with means for intermittently feeding a metal strip-blank, of means acting upon said blank to form a succession of connected fastener-elements, buffing means operating intermittently upon the connected series of fastener-elements, and means for severing the connections between individual fastener-elements.

42. In a machine of the character described, the combination with means for intermittently feeding a metal strip-blank, of means acting upon said blank to form a succession of connected fastener-elements, a pivotally mounted frame movable toward and away from said blank, buffing wheels journaled in said frame, driving means for said buffing wheels, means rocking said frame, and means for severing the connections between individual fastener-elements.

43. In a machine of the character described, the combination with means for intermittently feeding a metal strip-blank, of means acting upon said blank to form a succession of connected fastener-elements having mounting jaws, a carrier having an element gripper, buffing means operating intermittently upon the connected series of fastener-elements, means for severing the connections between individual fastener-elements, means supporting a flexible carrier tape movable toward said element gripper, and means for clamping elements upon said carrier tape.

44. In a machine of the character described, the combination with means for feeding a connected series of fastener-elements, of an element cut-off, an element gripper, a pilot member adapted to accurately position a fastener-element with reference to the cut-off and gripper, and means for actuating said pilot member, said gripper, and said cut-off to effect the gripping of a cut-off element.

45. In a machine of the character described, the combination with means for feeding a connected series of fastener-elements, of an element cut-off, an element gripper, a pilot member adapted to accurately position a fastener-element with reference to the cut-off and gripper, and common operating means for successively actuating said pilot member, said gripper and said cut-off to effect the gripping of a cut-off element.

46. In a machine of the character described, the combination with means for feeding a connected series of fastener-elements, of an element cut-off mechanism, an element gripper mechanism, a pilot member adapted to accurately position a fastener-element with reference to the cut-off and gripper mechanisms, and a reciprocating plunger adapted to operate said pilot member and said gripper and cut-off mechanisms.

47. In a machine of the character described, the combination with means for feeding a connected series of fastener-elements, of an element cut-off mechanism, an element gripper mechanism, a pilot member adapted to accurately position a fastener-element with reference to the cut-off and gripper mechanisms, and a reciprocating plunger adapted to successively operate said pilot member, said gripper mechanism and said cut-off mechanism.

48. In a machine of the character described, the combination with means for feeding a connected series of fastener-elements, of an element cut-off mechanism, an element gripper mechanism, an operating plunger carrying tappets adapted to actuate said gripper and cut-off mechanisms, and a pilot member mounted upon said plunger and adapted to engage the connected series of fastener-elements when the plunger moves to operate the gripper and cut-off mechanisms.

49. In a machine of the character described, the combination with means for feeding fastener-elements, of a carriage having a lower fixed gripper member, a movable upper gripper member, and a latching device arranged to latch the movable gripper member in closed position.

50. In a machine of the character described, the combination with means for feeding fastener-elements, of a carriage having a lower fixed gripper member, a movable upper gripper member, a spring normally holding the movable gripper member open, and a latching device arranged to latch the movable gripper member against motion.

51. In a machine of the character described, the combination with means for feeding fastener-elements, of a carriage having a lower fixed gripper member, a movable upper gripper member, a spring acting upon said movable gripper member, and a spring actuated latching device arranged to latch the movable gripper member in either open or closed position.

52. In a machine of the character described, the combination with means for feeding fastener-elements, of a carriage having a lower fixed gripper member formed with a recessed face to receive a fastener-element, and a movable gripper member pivoted upon the carriage adjacent to said fixed member and formed with a projecting nose shaped to fit over a fastener-element and clamp it against said recessed face of the fixed gripper member.

53. In a machine of the character described, the combination with means for feeding fasten-

er-elements, of a carriage having a lower fixed gripper member formed with a recessed face to receive a fastener-element, a movable gripper member pivoted upon the carriage adjacent to said fixed member and formed with a projecting nose shaped to fit over a fastener-element and clamp it against said recessed face of the fixed gripper member, and a spring latch controlling said movable gripper member.

54. In a machine of the character described, the combination with means for feeding fastener-elements, of a carriage having a lower fixed gripper member formed with a recessed face to receive a fastener-element, a movable gripper member pivoted upon the carriage adjacent to said fixed member and formed with a projecting nose shaped to fit over a fastener-element and clamp it against said recessed face of the fixed gripper member, a spring acting upon said movable gripper member, and a latch controlling said movable gripper member.

55. In a machine of the character described, the combination with means for feeding fastener-elements, of a carriage having a lower fixed gripper member, an upper movable gripper member pivoted upon the carriage and movable toward and away from said fixed gripper member, a latching lever pivoted upon said carriage adjacent to said movable gripper member, said latching lever being movable transversely of the plane of movement of said movable gripper member and adapted to frictionally engage a face of said gripper member to yieldingly hold the gripper open or to engage a rear edge of the movable gripper member to firmly lock the gripper closed upon a fastener-element.

56. In a machine of the character described, the combination with means for feeding fastener-elements, of a carriage having a fixed gripper member, a movable gripper member pivoted upon the carriage and movable toward and away from said fixed gripper member, a latching lever pivoted upon said carriage and movable into engagement with said movable gripper member to firmly lock the gripper closed upon a fastener-element, and a timed tripping device to disengage said latch from said movable gripper member for releasing it.

57. In a machine of the character described, the combination with means for feeding fastener-elements, of a carriage having a fixed gripper member and a movable gripper member, a gripper latching lever pivoted upon said carriage adjacent to said movable gripper member, a trip lever upon the carriage controlling said latching lever, and a power operated device periodically thrown into engagement with said trip lever.

58. In a machine of the character described, the combination with means for feeding a series of connected fastener-elements, of the fixed and movable cut-off members in the path of said fastener elements, said movable cut-off member being spring supported in its inactive or retracted position, a gripper carriage having the cooperating fixed gripper member and movable gripper member, said movable gripper member being spring supported in its open position, and an operating plunger adapted to act upon said movable gripper member and said movable cut-off member to grip an element severed from the series.

59. In a machine of the character described, the combination with means for feeding a series of connected fastener-elements, of fixed and movable cut-off members in the path of said

fastener-elements, said movable cut-off member being spring supported, a gripper carriage having a fixed gripper member and a movable gripper member, said movable gripper member being spring supported, an operating plunger carrying tappets adapted to act successively upon said movable gripper member and said movable cut-off member to grip an element severed from the series, and a pilot member mounted upon said operating plunger and adapted to engage the connected fastener-elements and accurately position an element with reference to the cut-off and gripper members.

60. In a machine of the character described, the combination with means for feeding a connected strip of fastener-elements including a pronged plate adapted to be moved into and out of engagement with said strip, of an element cut-off mechanism, an element gripper mechanism, an operating plunger for actuating said gripper and cut-off mechanisms, a pilot member operated by said plunger adapted to accurately position a fastener-element with reference to the cut-off and gripper mechanisms, and means actuated by said plunger for disengaging said pronged feed plate from said strip of elements when the pilot member is in action, and move said pronged feed plate into engagement with said strip when the pilot member is withdrawn.

61. In a machine for making separable fastener stringers, the combination with means for feeding a ribbon or tape, of means acting upon said ribbon or tape to form thereon a thickened bead, and means for securing individual interlocking elements at uniform intervals upon said thickened bead.

62. In a machine of the character described, the combination with means for supporting and feeding a ribbon or tape, of means acting upon said ribbon or tape to longitudinally fold a four-ply thickened bead thereon, and means for securing fastener-elements upon said thickened bead.

63. In a machine of the character described, the combination with means for supporting and feeding a ribbon or tape, of means acting upon said ribbon or tape to longitudinally fold a four-ply thickened bead thereon, means for securing fastener-elements upon said thickened bead, and mechanism for cutting off lengths of said beaded ribbon or tape.

64. In a machine of the character described, the combination with means for longitudinally folding a ribbon or tape, of a pair of cooperating bead forming members respectively grooved and ribbed to act upon the inner and outer faces of the fold of a ribbon or tape to reverse the crown of the fold and produce a thickened folded bead and means for securing fastener elements upon said bead.

65. In a machine of the character described, the combination with means for longitudinally folding a ribbon or tape, a pair of rollers formed with concave peripheries freely journaled upon a support projecting between the two-ply of the folded ribbon or tape, and a roller having a convex periphery mounted outside of and adjacent to the fold of the ribbon or tape and adapted to press the crown of the fold into the concave peripheries of said first-named pair of rollers, for reversing the crown of the fold and producing an integral thickened bead or folded edge upon the ribbon or tape, means for forming fastener-elements with open mounting jaws, means for presenting the thickened or beaded edge of the fold-

ed tape in the open jaws of said fastener-elements, and means for clamping the jaws of said elements upon the tape.

66. In a machine of the character described, the combination with means for longitudinally folding and beading a ribbon or tape, of intermittently acting feeding mechanism comprising tape engaging gripper bars movable toward each other to grip the tape and away from each other to release the tape, and a pair of actuating cam-bars having pin and slot engagement with said gripper bars, said cam-bars having limited relative movements upon said gripper bars for moving them into and out of engagement with the folded ribbon or tape, and further movements with the gripper bars to effect the feed of the tape.

67. In a machine of the character described, the combination with means for longitudinally folding and beading a ribbon or tape, of intermittently acting feeding mechanism comprising tape engaging gripper bars movable toward each other to grip the tape and away from each other to release the tape, means for forming fastener-elements having mounting yokes, means for presenting the beaded edge of the tape in the yokes of said elements, plungers carrying clenching devices adapted to clamp the yokes of elements upon the tape, and a pair of actuating cam-bars having pin and slot engagement with said gripper bars, and pin and slot engagement with the clencher carrying plungers, said cam-bars having a limited relative movement upon said gripper bars and said plungers for moving them into and out of engagement with the tape, and movements with the gripper bars to cause the feed of the tape when the gripper bars are gripped thereon and to retract the gripper bars for a new grip upon the tape when the gripper bars are free from the tape.

68. In a machine of the character described, the combination with means for longitudinally folding and beading a ribbon or tape, of intermittently acting feeding mechanism comprising tape engaging gripper bars movable toward each other to grip the tape and away from each other to release the tape, plungers carrying clenching devices adapted to clamp fastener-elements upon the tape, a pair of actuating cam-bars having pin and slot engagement with said gripper bars, and pin and slot engagement with said clencher carrying plungers, said cam-bars having a limited relative movement upon said gripper bars and clencher carrying plungers for moving them into and out of engagement with the tape, and automatic latches carried by said cam-bars and engaging parts upon said gripper bars to cause the gripper bars to travel with the cam-bars.

69. In a machine of the character described, the combination with means for longitudinally folding and beading a ribbon or tape, of a pair of tape feeding gripper bars, a pair of operating cam-bars formed with oppositely arranged cam slots in which engage anti-friction rollers journaled upon said gripper bars, and automatic latches carried by said cam-bars and engaging parts upon said gripper bars, said latches causing the gripper bars to travel with the cam-bars when they are in engagement and allowing relative motion when they are disengaged.

70. In a machine of the character described, the combination with means for longitudinally folding and beading a ribbon or tape, of a pair of tape feeding gripper bars, spring mechanism operating upon said gripper bars, a pair of operating cam-bars formed with oppositely ar-

ranged cam slots in which engage anti-friction rollers journaled upon said gripper bars, automatic latches carried by said cam-bars and engaging lugs upon said gripper bars, said latches causing the gripper bars to travel with the cam-bars when they are in engagement, and means for operating said cam-bars.

71. In a machine of the character described, the combination with means for longitudinally folding a ribbon or tape, of means for feeding said tape through the folding means, spring actuated plungers operating transversely of the path of the folded tape, each of said plungers being formed at its inner end with spaced lugs adapted to fit over and gauge previously attached fastener-elements, means for clamping fastener units upon the folded edge of the tape in proper spaced relation to the previously attached units, and means for operating said plungers.

72. In a machine of the character described, the combination with means for longitudinally folding a ribbon or tape, of means for feeding said tape through the folding means, spring actuated plungers operating transversely of the path of the folded tape, each of said plungers carrying clenching blades projecting inwardly and adapted to clamp fastener units upon the folded edge of the tape, and means for operating said plungers.

73. In a machine of the character described, the combination with means for longitudinally folding and beading a ribbon or tape, of means for feeding said tape through the folding and beading means, guideways extending transversely of the path of the folded tape, spring actuated plungers operating in said guideways, each of said plungers being formed at its inner end with spaced lugs adapted to fit over and gauge previously attached fastener-elements, auxiliary plungers mounted upon said main plungers, clenching tools projecting inwardly from said auxiliary plungers and adapted to clamp fastener-elements upon the beaded folded edge of the tape in proper spaced relation to the previously attached units, and means for operating said plungers.

74. In a machine of the character described, the combination with means for producing a flexible carrier tape or stringer, means for feeding said stringer, and means for presenting fastener-elements in position to be clamped upon the stringer, of slotted main plungers operating transversely of the path of the stringer toward and away from each other, each main plunger being formed at its inner end with spaced gauging lugs to fit over previously attached fastener-elements, auxiliary plungers sliding in guideways of said main plungers, clenching tools mounted upon said auxiliary plungers adapted to clamp fastener-elements upon said flexible stringer, a pair of operating cam-bars formed with oppositely arranged cam slots, the said cam-bars extending through said slotted main plungers, and anti-friction rollers journaled upon said auxiliary plungers and engaging the cam slots of said cam-bars.

75. In a machine of the character described, the combination with means for producing a flexible carrier tape or stringer, means for feeding said stringer, and means for presenting fastener-elements in position to be clamped upon the stringer, of vertically slotted guideways extending transversely of the path of the stringer, longitudinally slotted main plungers operating in said guideways toward and away from each

other, each main plunger being formed at its inner end with spaced gauging lugs to fit over previously attached fastener-elements, auxiliary plungers mounted on said main plungers and having limited sliding movement thereon, clenching tools 5 upon said auxiliary plungers adapted to clamp fastener-elements upon said flexible stringer, a pair of operating cam-bars formed with oppositely arranged cam slots, the said cam-bars extending through the guide slots of said guide- 10 ways and said main plungers, and anti-friction rollers journaled upon said auxiliary plungers and engaging the cam slots of said cam-bars.

76. In a machine of the character described, the combination with means for producing a flex- 15 ible carrier tape or stringer, means for feeding said stringer, and means for presenting fastener-elements in position to be clamped upon the stringer, of slotted guideways extending transversely of the path of the stringer, longitudinally 20 ly slotted and channeled main plungers operating in said guideways toward and away from each other, springs engaging said main plungers and yieldingly urging them inwardly, each main plunger being formed at its inner end with spaced 25 gauging lugs to fit over previously attached fastener-elements, auxiliary plungers mounted in the longitudinal channelled guideways of said main plungers and having limited sliding movement therein, clenching tools upon said auxil- 30 iary plungers adapted to clamp fastener-elements upon said flexible stringer, a pair of operating cam-bars formed with oppositely arranged cam slots, the said cam-bars extending through the guide slots of said guideways and said main 35 plungers, anti-friction rollers journaled upon said auxiliary plungers and engaging the cam slots of said cam-bars, and means for reciprocating said cam-bars.

77. In a machine of the character described, 40 the combination with mechanism for producing fastener-elements, mechanism for presenting fastener-elements in position for mounting upon flexible stringers, mechanism for producing flex- 45 ible stringers, and mechanism for clamping fastener-elements upon flexible stringers, of means actuated by the operation of said machine for automatically controlling the operation of said mechanisms.

78. In a machine of the character described, 50 the combination with mechanism for producing fastener-elements, mechanism for presenting fastener-elements in position for mounting upon flexible stringers, mechanism for producing a continuous flexible stringer, mechanism for 55 clamping fastener-elements upon flexible stringers, and mechanism for cutting off lengths of said stringer, of means actuated by the operation of said machine for automatically controlling the operation of said mechanisms. 60

79. In a machine of the character described, the combination of means for producing fastener-elements, means for producing flexible stringers and mounting said fastener-elements thereon, and a divided power driving mechanism 65 including a clutch, a magnetic control for said power mechanism, a second magnetic control for said clutch, and automatic means operated by the machine for throwing said controls into action. 70

80. In a machine of the character described, the combination with a power shaft, a cam shaft driven from said power shaft, a clutch arranged between said power shaft and said cam shaft, mechanism operated by said cam shaft for pro- 75

5 ducing fastener-elements, mechanisms operated by said power shaft for producing flexible stringers and mounting fastener-elements upon said stringers, a counter controlled throw-out mechanism for said power shaft, and machine operated automatic controls for said clutch.

10 81. In a machine of the character described, the combination with a power shaft, a cam shaft driven from said power shaft, an automatic clutch arranged between said power shaft and said cam shaft, mechanisms operated by said cam shaft for producing fastener-elements and conveying them to a position for mounting upon a stringer, mechanisms operated by said power shaft for producing a continuous flexible stringer, feeding said stringer and mounting fastener-elements upon said stringer, automatic intermittently acting mechanism for cutting off sections of said continuous stringer having mounted fastener-elements, a counter operated by the machine, throw-out mechanism for said power shaft actuated by said counter, and machine operated automatic controls for said clutch.

15 82. In a machine of the character described, the combination with a power shaft, a cam shaft driven from said power shaft, an automatic clutch arranged between said power shaft and said cam shaft, mechanism operated by said cam shaft for producing fastener-elements and conveying them into position for mounting upon the flexible stringer, mechanisms operated by said power shaft for producing a continuous flexible stringer, feeding said stringer and mounting fastener-elements upon said stringer, electro-magnetically operated shears for cutting off sections of said stringer carrying mounted fastener-elements, a counter operated by a regularly acting part of the machine, electro-magnetic throw-out mechanism for said power shaft under the control of said counter, electro-magnetic controls for said clutch, and automatic circuit controlling mechanism operated by the machine and in circuit with the shears magnet and the clutch magnetic controls.

20 83. In a machine of the class described, the combination with means for feeding a continuous flexible stringer and means for applying fastener elements along the edge of said stringer in closely spaced relation, of means for periodically increasing the spacing to group the elements on the stringer, and electrical devices for controlling said last named means including circuit control mechanism operated by the machine.

25 84. In a machine of the class described, the combination with intermittently operating stepwise feeding means for feeding a continuous flexible stringer, and means for applying fastener elements along the edge of said stringer in closely spaced relation, of means for periodically increasing the amount of stringer feed between successive elements on said stringer to group the elements on the stringer, and electrical devices for controlling said last named means including circuit control mechanism operated by the machine.

30 85. In a machine of the class described, the combination with means for feeding a continuous flexible stringer, and means for applying fastener elements along the edge of said stringer in closely spaced relation, of means for periodically interrupting the operation of said applying means without interrupting the operation of said feeding means, and electrical devices for controlling said interrupting means including circuit control mechanism operated by the machine.

35 86. In a machine of the class described, the

combination with means for feeding a continuous flexible stringer and means for applying fastener elements along the edge of said stringer in closely spaced relation, of propelling means for said applying means including a clutch, a solenoid for disengaging said clutch, an electrical circuit including said solenoid and a source of electrical energy, and means for controlling said circuit responsive to a predetermined number of operations of said machine for disengaging said clutch and thereby periodically increasing the spacing between elements to group the elements on the stringer.

40 87. In a machine of the class described, the combination with means for feeding a continuous flexible stringer and means for applying fastener elements along the edge of said stringer in grouped relation, of cut-off shears operated automatically by the machine for severing said stringer between groups of elements.

45 88. In a machine of the class described, the combination with means for feeding a continuous flexible stringer, means for feeding fastener elements each having spaced apart jaws at one end, and means for placing said jaws astride the edge of said stringer, reciproacting clenching tools operable on opposite sides of said stringer to clench said jaws on the edge of said stringer, and reciprocable gauging lugs adapted to engage over previous attached fastener elements whereby the element being clenched on is properly spaced from the attached elements.

50 89. The method of forming separable fastener members of the type having separated U-shape clamping jaws at one end, interlocking means at the other end, and riding lugs projecting laterally from the member between said interlocking means and jaws, which comprises feeding a flat metal strip, blanking out from said strip a succession of fastener elements with the mounting jaws and interlocking end at least partially formed, said fastener members being integrally connected side by side by portions of said flat strip, and cutting said members apart at said integral connections and leaving enough of said integral connections to form said riding lugs.

55 90. The method of forming separable fastener members of the kind having separated compressible jaws at one end and interlocking devices at the other end, which comprises feeding a flat strip of metal equal in width to the overall length of said fastener members, cutting out portions of said strip at the sides of said fastener members and between the jaw portions, leaving a portion of the strip connecting said fastener members in side by side relation, and finally severing the strip between said fastener members.

60 91. In a machine for making separable fastener stringers, the combination with means for forming a beaded fabric tape and for temporarily holding the bead formation on said tape, of means for supplying fastener members and means for clamping said fastener members around said beaded edge, whereby said bead is held permanently to form.

65 92. In a machine for making separable fastener stringers, the combination with means for guiding a flat tape, folding devices for folding a portion of said flat tape to form a beaded edge and for temporarily holding the tape in such folded shape, means for supplying fastener members to said beaded edge, and means for clamping said members around said edge whereby the same is held permanently in folded shape.

70 93. In a machine for making separable fas-

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tener stringers, the combination of means for folding a ribbon of flexible material into a two-ply carrier or stringer, with means for clamping individual interlocking elements to the folded edge at uniform intervals.

94. In a machine for making separable fastener stringers, the combination of means for folding a ribbon of flexible material into a beaded two-ply carrier or stringer, with means for clamping individual interlocking elements to the folded edge at uniform intervals.

95. In a machine for making separable fastener stringers, the combination with means for longitudinally folding a ribbon or tape, of means acting upon said folded ribbon or tape to form a thickened folded bead, and means for attaching individual interlocking elements at uniform intervals upon said bead.

96. A ribbon-like strip of thin sheet material having sections cut out along one edge to form mounting jaws of slide fastener members, and sections cut out along the other edge to form spaced portions, said mounting jaws being wholly disposed in the plane of the original flat strip, said spaced portions each being formed to provide the interlocking means of a slide fastener member, said members so formed being integrally connected by severable portions of the strip.

97. A single piece of material presenting in plan view a plurality of Y-shaped outlines representing the Y-shaped external contours of integrally connected slide fastener members each member having spaced apart jaws at one end and an interlocking projection and recess at the other end.

98. The method of forming slide fastener members of the class described which consists of operating on a single piece of material to form a plurality of integrally connected elements presenting in plan view a plurality of Y-shaped outlines each representing the Y-shaped external outline of a slide fastener member with spaced apart jaws on one end of each element and interlocking means on the other end, and separating one element from another to form individual slide fastener members.

99. The method of forming slide fastener members of the class described which consists of cutting away portions from a flat piece of material leaving an integrally connected series of elements each having substantially the Y-shaped external outline of a slide fastener member with spaced apart jaws at one end, forming interlocking means on each element at the other end while

the elements are connected, and finally separating one member from another.

100. The method of forming slide fastener members of the class described which consists of cutting away portions from a flat elongated strip of material to leave an integrally connected series of elements having substantially the Y-shaped external outline of slide fastener elements extending transversely of the strip, forming interlocking means on said elements while connected in the strip and finally separating one member from another.

101. The method of forming slide fastener members of the class described which consists of forming a plurality of connected fastener members presenting in plan view a plurality of Y-shaped outlines each representing the Y-shaped external outline of a slide fastener member, with spaced apart jaws on one end of each member and interlocking means on the other end, with the major portion of the exterior edges of said members exposed, operating on said exterior edges for smoothing the same, and then separating one member from another to form individual slide fastener members.

102. The method of forming separable fastener members of the kind having separated compressible jaws at one end and interlocking devices at the other end, which comprises feeding a flat strip of metal equal in width to the overall length of said fastener members, cutting out portions of said strip at the sides of said fastener members and between the jaw portions, leaving a portion of the strip connecting said fastener members in side by side relation, and leaving the major portion of the exterior edges of said fastener members exposed, operating on said exposed edges for smoothing the same, and finally severing the strip between said fastener members.

103. In a machine for making separable fastener stringers, the combination with means for supporting a carrier or stringer, of means for forming an integrally connected series of partially finished fastener members including means for forming separate mounting yokes, means for feeding said fastener members, means for separating from the series and completing individual fastener members, means for supporting completed individual fastener members, and means for clamping fastener members upon said carrier or stringer.

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DEFENDANT'S EXHIBIT "K"

F. R. Taberlet Patent No. 2,294,253

Filed Mar. 23, 1940

Patented Aug. 25, 1942



Aug. 25, 1942.

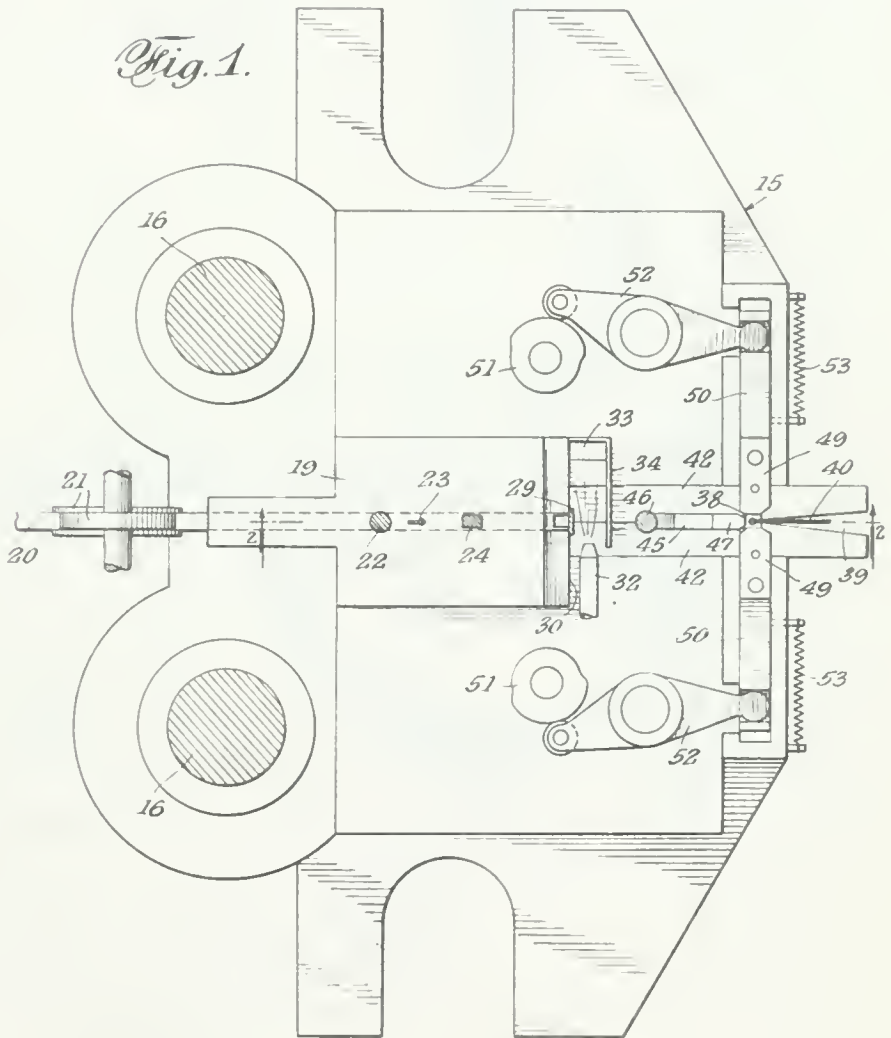
F. R. TABERLET

2,294,253

FASTENING MACHINE

Filed March 23, 1940

3 Sheets—Sheet 1



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2,294,253

FASTENING MACHINE

Filed March 23, 1940

3 Sheets—Sheet 2

Fig. 2.

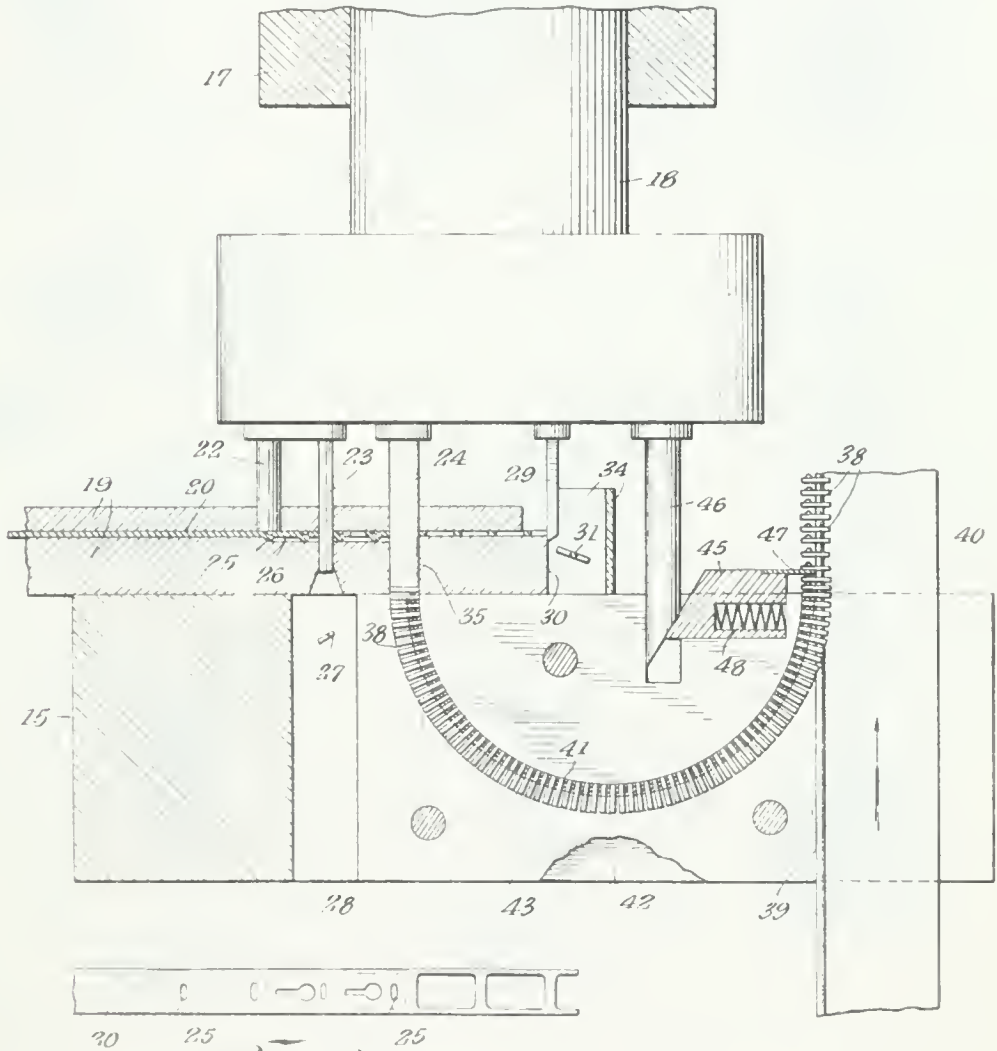


Fig. 3.

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2,294,253

FASTENING MACHINE

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3 Sheets-Sheet 3

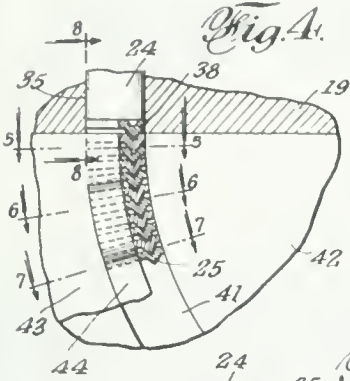


Fig. 4.

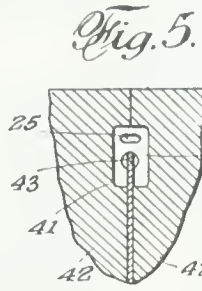


Fig. 5.

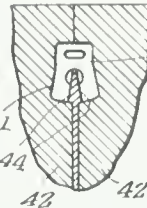


Fig. 6.

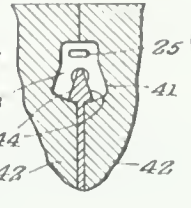


Fig. 7.

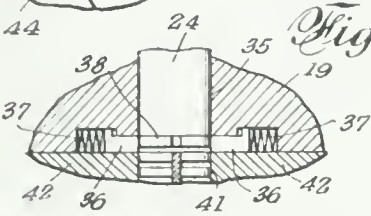


Fig. 8.

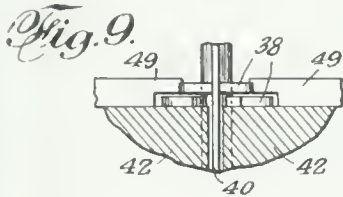


Fig. 9.

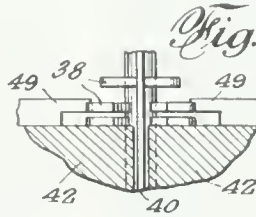


Fig. 11.

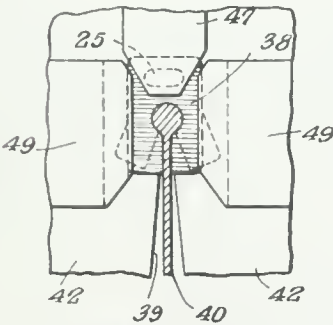


Fig. 10.

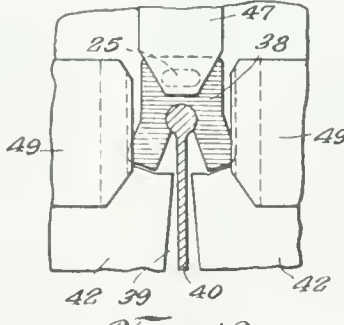


Fig. 12.

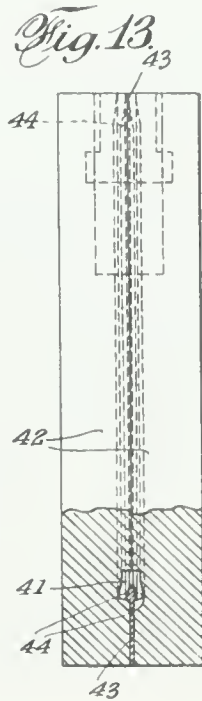


Fig. 13.

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UNITED STATES PATENT OFFICE

2,294,253

FASTENING MACHINE

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Application March 23, 1940, Serial No. 325,617

9 Claims. (Cl. 153—1)

The present invention relates to the automatic production of slide fasteners and pertains more particularly to a machine and method for forming the fastener elements and for assembling them upon a tape.

The invention is characterized by its simplicity, production economy, and efficiency of operation, entailing the production of the fastener elements from a strip of metal and the guiding of the same to the point of application to a tape upon which they are fastened.

It is an object of the invention to provide apparatus whereby the elements produced thereby are directed to the point where they are applied to the tape by displacement of said elements successively in a guide track. More simply stated the invention contemplates apparatus having a guide track for receiving the elements as they are formed at one end of said track to cause displacement of the elements at the other end of said track, and at the latter point to be affixed to a tape.

In order to use a strip of metal of the narrowest commensurate width for the purposes of economy, the invention further contemplates forming the elements in the shape and form which they assume on the tape, providing means in the guide track for spreading the elements so they may be readily associated with the tape and then restoring the elements to their initial shape as they are clamped upon the tape.

The invention also contemplates novel means for clamping the elements upon the tape and includes, among other novel features, the provision of means for stripping the elements from the element forming punch, and the provision of means for chopping up the scrap of the strip from which the elements are formed and disposing of the same.

The foregoing and other objects, features and advantages of the invention will be more clearly evident from the following detailed specification describing the invention.

The accompanying drawings, forming the basis for the specification, illustrate, in an exemplary manner, a machine incorporating the inventive concept and by means of which the present novel method may be practiced.

In the drawings:

Fig. 1 is a top plan view of a machine incorporating the features of the invention, the ram thereof being omitted and the punch members thereof being shown in cross-section;

Fig. 2 is a vertical sectional view as taken on line 2—2 of Fig. 1;

Fig. 3 is a plan view of a strip showing its condition as moving through the machine;

Fig. 4 is a fragmentary detail vertical sectional view showing the entering end of the fastener element guide track;

Figs. 5, 6 and 7 are respectively detail sectional views as taken on lines 5—5, 6—6 and 7—7 of Fig. 4;

Fig. 8 is a fragmentary cross-sectional view as taken in the plane of line 8—8 of Fig. 4;

Figs. 9 and 11 are fragmentary detail sectional views of the exit end of the guide track and showing respective stages of operation;

Figs. 10 and 12 are fragmentary plan views of Figs. 9 and 11, respectively;

Fig. 13 is a vertical cross-sectional view of the track members showing the guide track therein.

In the preferred embodiment of the invention which is illustrated, the drives for the various operating portions of the machine have been omitted in-as-much as these drives may be conventional and are not necessary for understanding the structure and mode of operation.

The machine is preferably arranged upon a horizontal support 15 from which the vertical pilot studs 16 project upwardly to hold the guide 17 for the ram or punch 18. The latter may be reciprocated in the usual manner as by one revolution clutch means.

Upon the support 15 there are arranged members 19 which form a guide for a metal strip 20 from which the fastener elements are punched. This strip may be intermittently fed through said guide in uniform increments as by means of the feed rolls 21 in timed synchronous relation with the movement of the punch in any well-known manner.

As illustrated in Figs. 1, 2 and 3 the ram 18 is preferably provided with a tool 22 for forming the prong of the fastener element; with a tool 23 for punching out the slit of said element; and with a tool 24 for severing the element from said strip. It will be noted that the operations performed by these three tools are simultaneous so that with each operation of the punch and with a commensurate feed of the metal strip 20, a fastener element is formed although three stages of operation have been employed to form said element. In order to accommodate the prong 25 after formation by the tool 22 the lower of the members 19 is recessed as at 26 so that feed of the strip 20 is not interfered with. The punching 27 which leaves the slit in the element may fall away as through a passage 28 formed in the support 15.

As seen in Fig. 3, when the elements have been severed from the strip, said strip is disposed of by chopping up the scrap as by means of a knife 29 having shearing engagement with the edge 30 of the lower member 19. These chopped pieces 31 of the strip are disposed of by means of an air jet 32 which blows them into a disposal passage 33 confined by the walls 34.

The punching tool 24 operates within a cavity 35 formed in the lower of the members 19. Inasmuch as it is necessary to strip the element away from said punch so as not to be pulled upward thereby during the recovery movement of the ram, means are provided as shown in Fig. 8 for frictionally engaging edge portions of the element to hold the same while the punch retracts.

As illustrated, this means preferably comprises the detents 36 urged, as by means of the springs 37, inwardly toward each other to clamp the element 38 therebetween. With each operation of the punch a new element is formed and serves to displace the preceding element as it becomes positioned between the detents 36.

The machine is provided with a passage 39 through which is intermittently moved a tape 40 upon which the elements 38 are to be mounted. Although not illustrated any suitable manner of moving the tape in the direction of the arrow and in an intermittent manner may be employed.

It is desired to transfer the elements 38 from their position beneath the punch 24 to an associated position with the tape 40 so that said elements may be clamped to said tape. In the present instance the means employed for this purpose preferably comprises an arcuate substantially semi-circular guide track 41 which is formed within the adjacent blocks 42 held in fixed supported relation on support 15.

It is evident from the above that as an element is formed by the punch 24 and urged thereby to a position between the detents 36, displacement of all of the elements forming a column and being in contact with one another within the guide track 41 occurs.

Thus, as a new element is formed, the element of the said column nearest the exit of the guide track is projected upwardly out of said guide track. This mode of feed occurs successively with each reciprocation of the ram 18.

In order to obviate accidental dearrangement of the elements within the guide track 41 it is preferred to position a stringer 43 within said track and having cooperative association with the slots formed in the elements 38.

Although the elements may be punched from the strip 20 in a spread condition so as to be ready for association with the tape and particularly with the bead thereof, it is preferred to form said elements in their closed or contracted condition so that a narrower strip 20 may be employed to effect a saving in the cost thereof. Since in their contracted condition the elements cannot be mounted upon the tape, it becomes necessary to spread them. For this purpose the stringer 43, at any desired portion of the guide track 41, is formed with the opposed cam surfaces 44. It is readily apparent that, as the elements progress in close contact with one another through the guide track, these cam surfaces wedge the elements apart from the condition shown in Fig. 5 to that shown in Fig. 7 where they are in tape mounting condition. 75

The guide track, of course, is designed to accommodate the spreading of the elements.

In order to control and definitely position the element which is being displaced from the guide track, a member 45 acted upon by a cam 46 carried by the ram, is moved to overstanding relation to said element and thus serves as a stop therefor. A finger 47 on the member 46 serves this purpose. When the ram is retracted, means, such as a spring 48, serves to move the finger 47 out of the mentioned overstanding relation with the ejected element.

While the ejected element is held as above described, it is clamped to the tape 40 as by means of clamp members 49. This condition is shown in Figs. 9 and 10. After the clamping action has occurred the finger 47 and the clamping members 49 are moved from engaging relation with the clamped element so that the tape 40 may be fed as hereinbefore indicated. After this movement of the tape the finger 47 is again moved to overstanding position with respect to the next ejected element and subsequently thereafter the clamping members 49 are operated to clamp said next element to the tape. In this manner the elements moved through the guide track are successively clamped to the tape 40.

The clamping members 49 may be operated in any suitable manner. For instance, they may be mounted upon slides 50 movable by cam means 51 through the medium of levers 52, the springs 53 serving to retract the clamping members, whereas the cam means 51 serve to control them during their clamping movement.

It will be particularly noted that no moving parts have been employed to effect the transfer of the elements from the punch to the tape, the transfer being effected by successive and progressive displacement of the elements as they are being formed. It is evident then that a particular characteristic of the machine is its simplicity and that its efficiency is high inasmuch as there is little likelihood of disarrangement of the operating parts.

While the machine has been described in considerable detail and with respect to an embodiment thereof which is at present preferred, it should be understood that the principles disclosed herein may as readily be practiced in embodiments thereof which may vary in detail from that disclosed.

It is intended, therefore, that the spirit and scope of the invention as claimed be not unduly limited by the present disclosure.

Having thus described the invention what is claimed as new and desired to be secured by Letters Patent, is:

1. A machine of the character described comprising means for forming fastener elements, said means including a punch for severing said elements from a strip of metal fed to said machine, means for stripping the elements from said punch comprising spring urged members arranged in spaced opposed relation and having frictional engagement with opposite lateral portions of said elements, track means for guiding said elements to a tape for mounting thereon, said elements contacting each other in said track means and being progressively displaced by at least one succeeding element severed by said punch to move another of said elements out of said track, and means for clamping each element to said tape as it leaves the track.

2. In a machine of the character described guide means for fastener elements, means for

noving said elements, said guide means comprising a curved channeled track, and means projecting into said track for gradually spreading the elements into tape associating condition during movement thereof along said track.

3. In a machine of the character described means for receiving fastener elements and guiding the same to a tape, means for moving said elements in said first mentioned means and means provided with opposed cam surfaces **ly** disposed within the first mentioned means for gradually spreading the elements into tape associating condition during movement thereof in said first mentioned means.

4. A machine of the character described comprising means for feeding fastener elements, guide means for receiving and directing said elements from said feeding means and provided with an inlet and an outlet, the respective contours of said inlet and said outlet being disposed in opposed direction, and a tape adapted to be intermittently moved and to which said elements are to be attached, said tape being positioned adjacent said outlet, said elements being fed through said inlet into said guide means and being movable therealong by succeeding elements fed by said feeding means whereby an element discharged from said guide means at said outlet is presented in proper associative relation with said tape and moved in the direction of the movement of the tape for engagement with said tape.

5. In a machine of the character described having means for feeding fastener elements and a tape adapted to be intermittently moved for mounting thereon fed fastener elements in spaced apart relation; said feeding means comprising guide means positioned adjacent said tape, said guide means being provided with an inlet and an outlet and being adapted to receive therein a column of fastener elements successively arranged and extending in contact with one another from said inlet to said outlet, and means provided with opposed cam surfaces projecting in said guide means for gradually spreading said elements into tape associating condition, whereby upon feeding an element through said inlet to said column said column will be displaced in such manner that an element thereof positioned adjacent said outlet is moved in the direction of said intermittently moved tape for engagement with said tape.

6. In a machine of the character described

having means for feeding fastener elements to a tape to be intermittently moved for mounting thereon said fastener elements in spaced apart relation; said means comprising curved guide means for said fastener elements, said guide means being provided with an inlet and an outlet and being adapted to receive a column of fastener elements therein extending successively and in contact with one another from said inlet to said outlet, the outlet of said curved guide means being positioned in such manner with respect to said inlet as to present elements adjacent said inlet and adjacent said outlet in opposed positions, an element adjacent said outlet astriding said tape for engagement with the tape upon feeding an element to said column through said inlet whereby said column is displaced.

7. The method of producing element bearing fastener tapes which consists in severing the elements successively from a strip of metal, each element having the shape and contour which it assumes when mounted on a tape, feeding said elements singly into a guide chute so that each element displaces the preceding element in contact therewith, whereby the elements are successively moved out of said guide chute, gradually spreading the elements into tape associating condition during their movement through said chute, and clamping each spread element to the fastener tape as said element comes out of said chute.

8. In the herein disclosed method, the step of displacing a stack of fastener elements transversely disposed in curved guide means as each element is formed and joins said stack, and the further step of gradually spreading the elements of said stack during their displacement lengthwise and out of said guide means from contracted to tape associating condition.

9. In a machine of the character described, stamping means for forming fastener elements, means for clamping the fastener elements on a tape, means for feeding the fastener elements from the forming means to the clamping means, said feeding means comprising a tubular guide having a passage corresponding to the shape of the fastener elements and interconnecting the stamping means and clamping means, said guide being slitted at a location adjacent said clamping means to bring the tape into contact with fastener elements at said location.

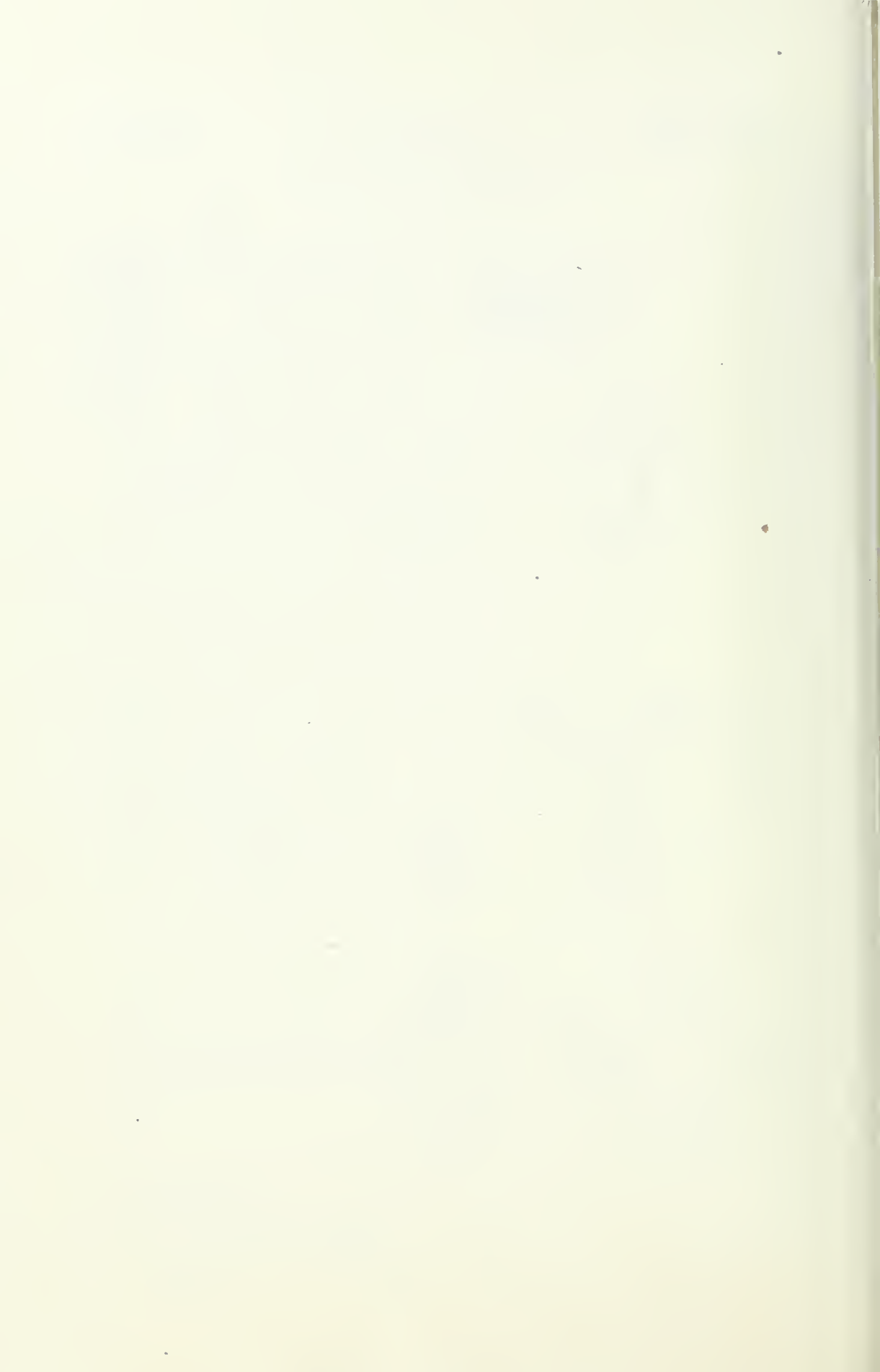
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DEFENDANT'S EXHIBIT 'I'

G. Wintritz Patent No. 2,201,068

Filed June 22, 1938

Patented May 14, 1940





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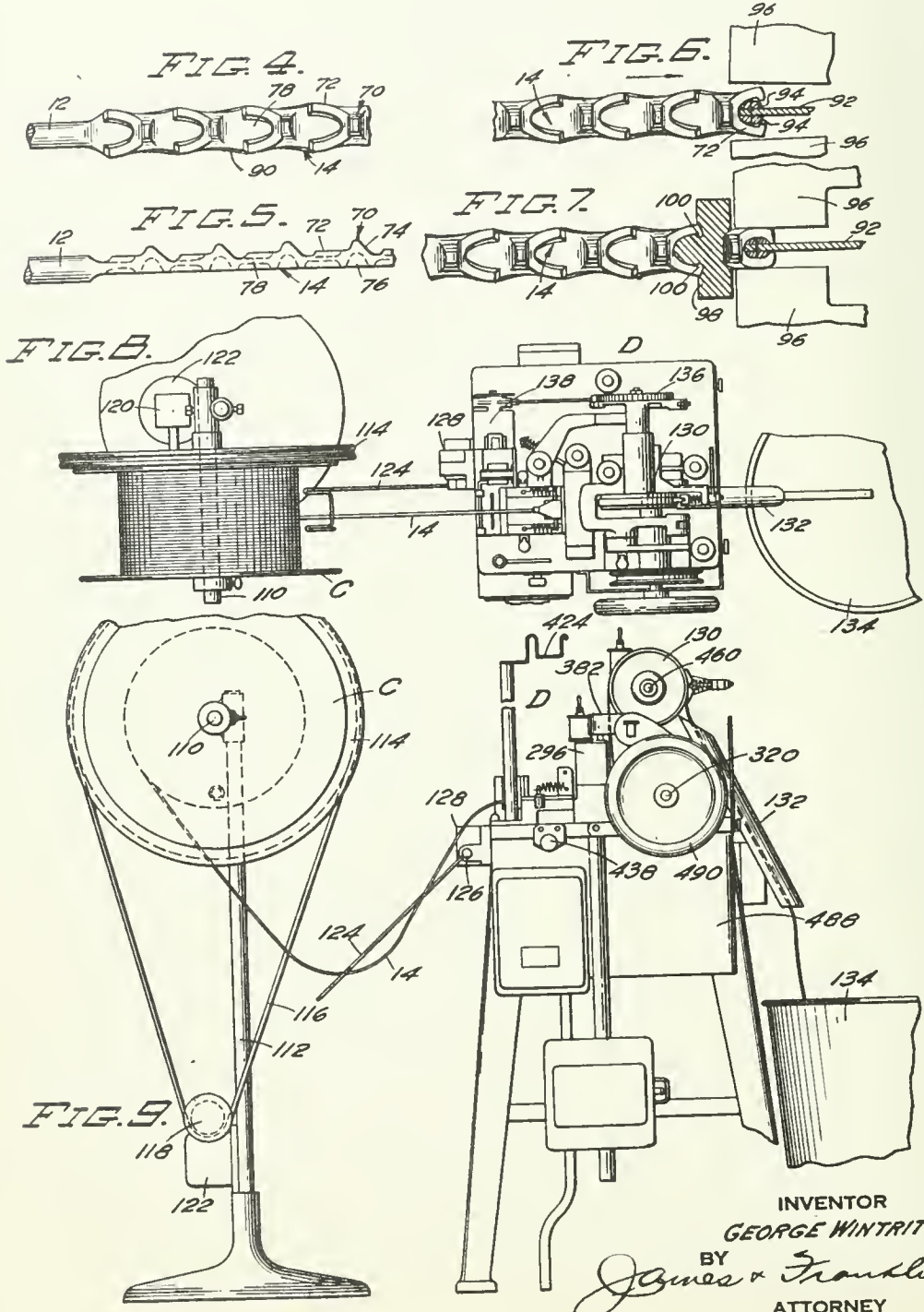
G. WINTRITZ

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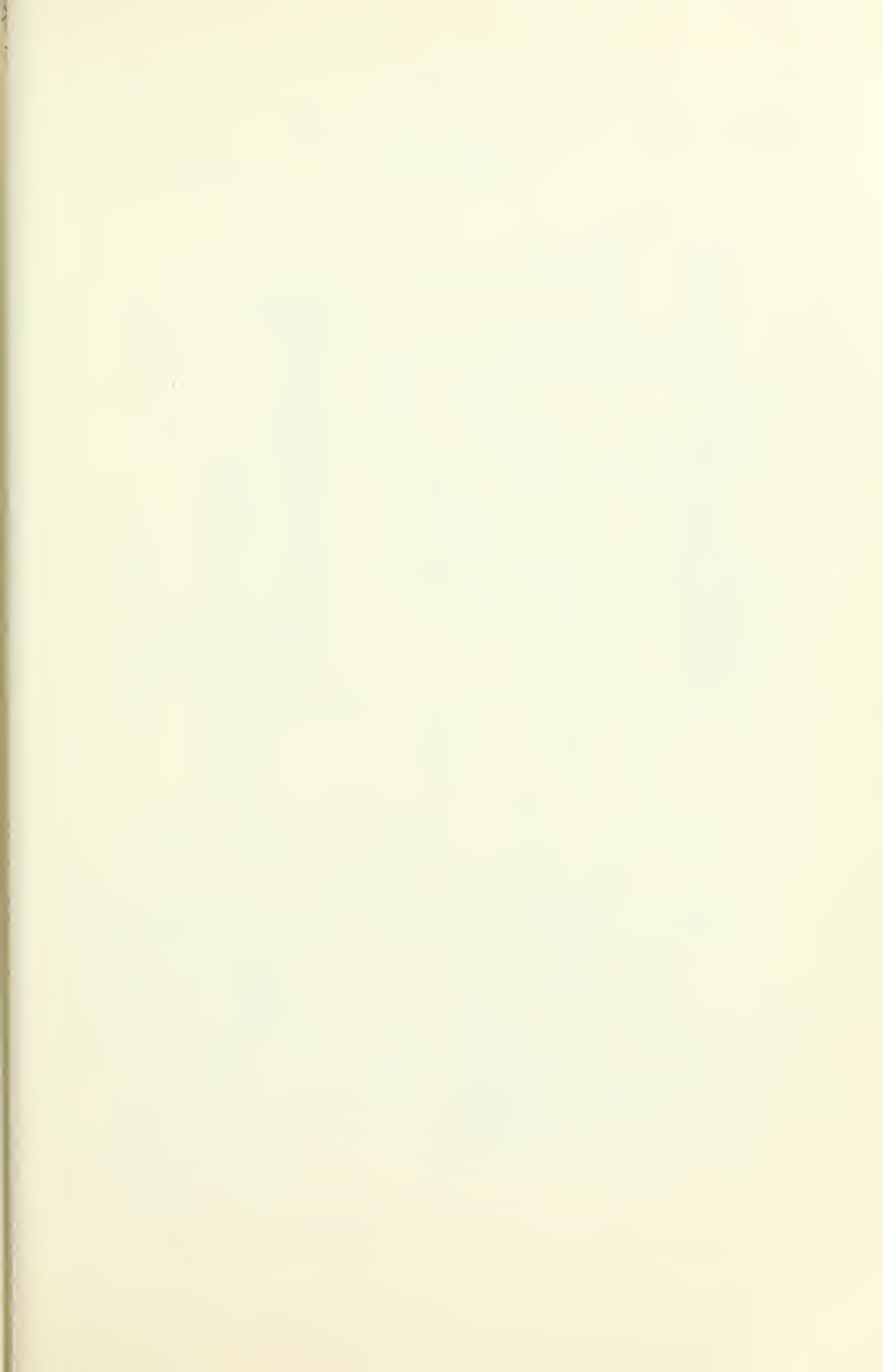
MANUFACTURE OF SLIDE FASTENERS

Filed June 22, 1938

7 Sheets-Sheet 2



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MANUFACTURE OF SLIDE FASTENERS

Filed June 22, 1938

7 Sheets-Sheet 3

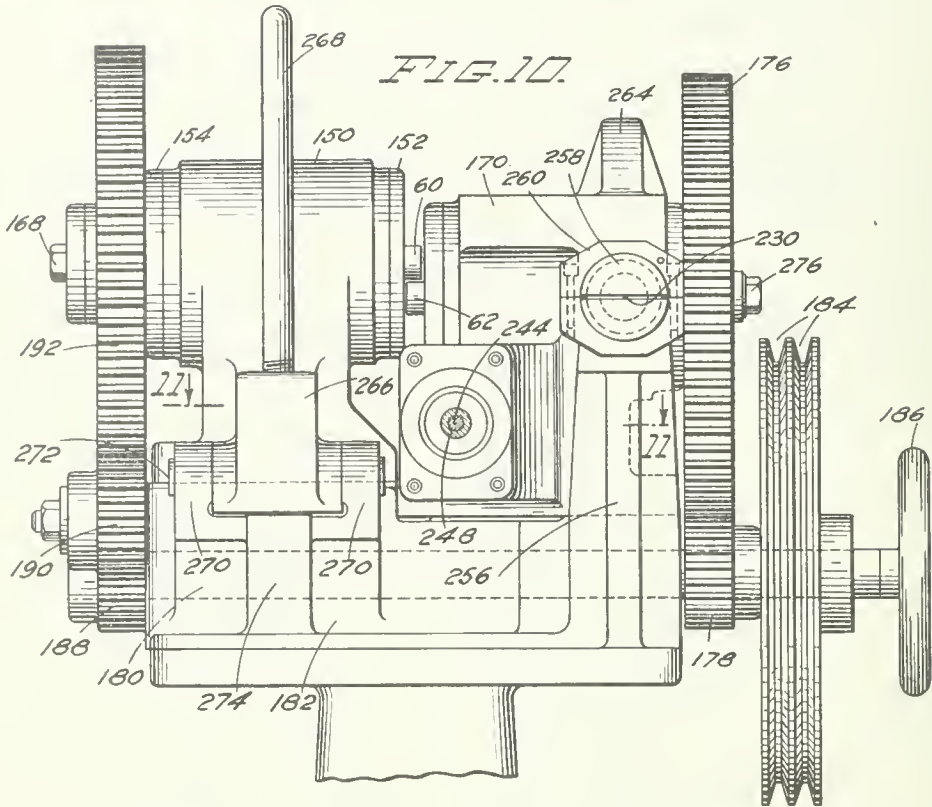


FIG. 11.

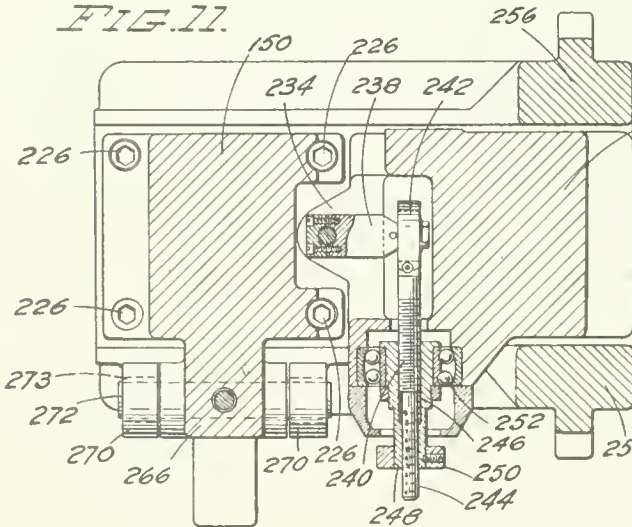
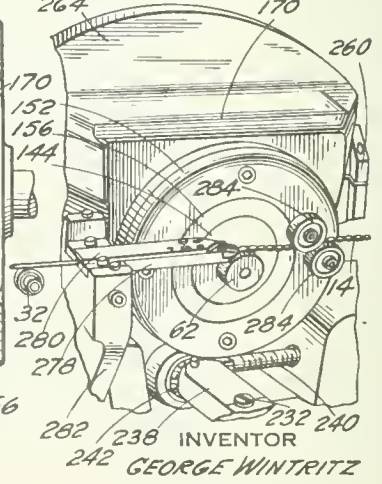


FIG. 12.



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2,201,068

MANUFACTURE OF SLIDE FASTENERS

Filed June 22, 1938

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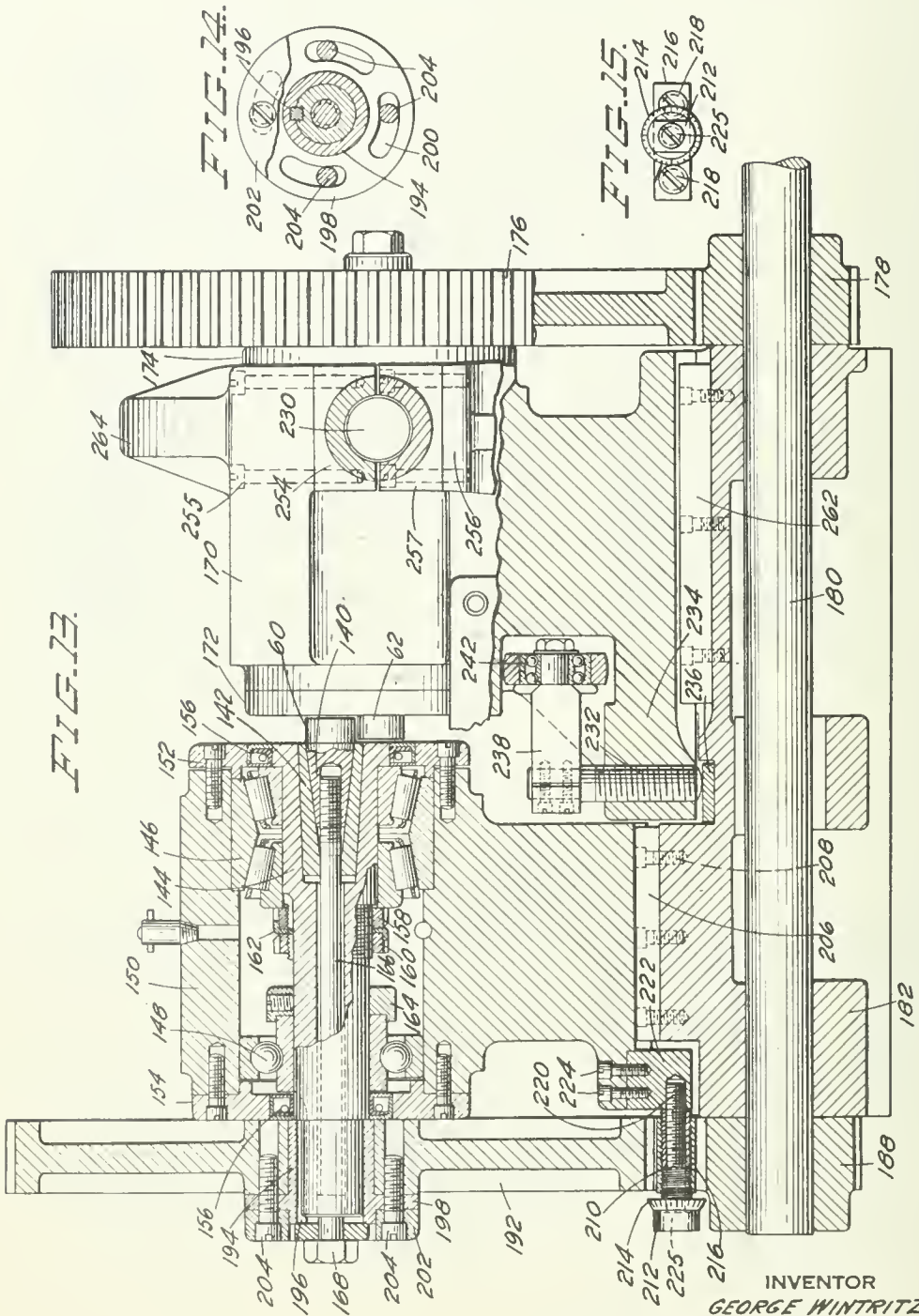


FIG. 13.

FIG. 14.

FIG. 15.

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2,201,068

MANUFACTURE OF SLIDE FASTENERS

Filed June 22, 1938

7 Sheets-Sheet 5

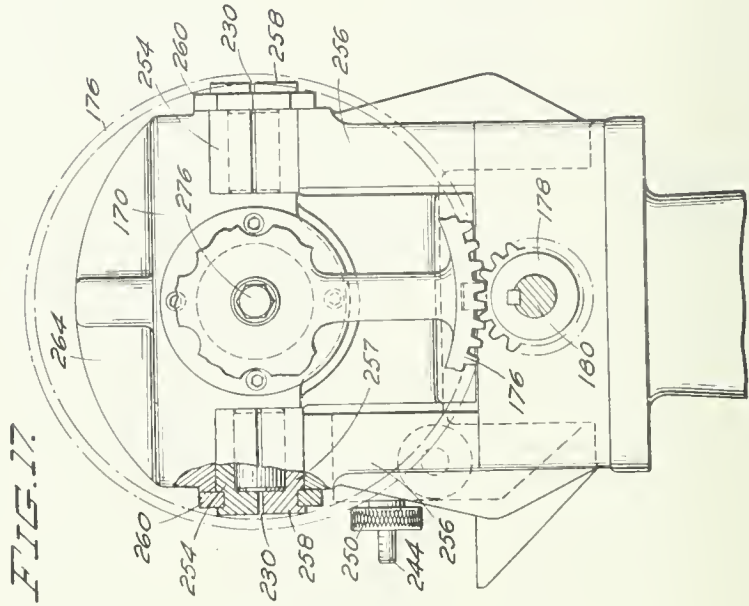


FIG. 17.

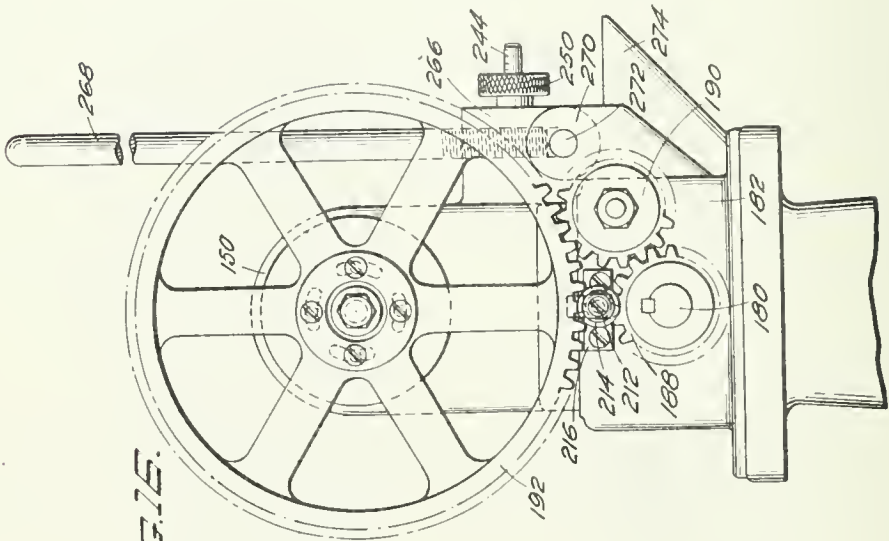
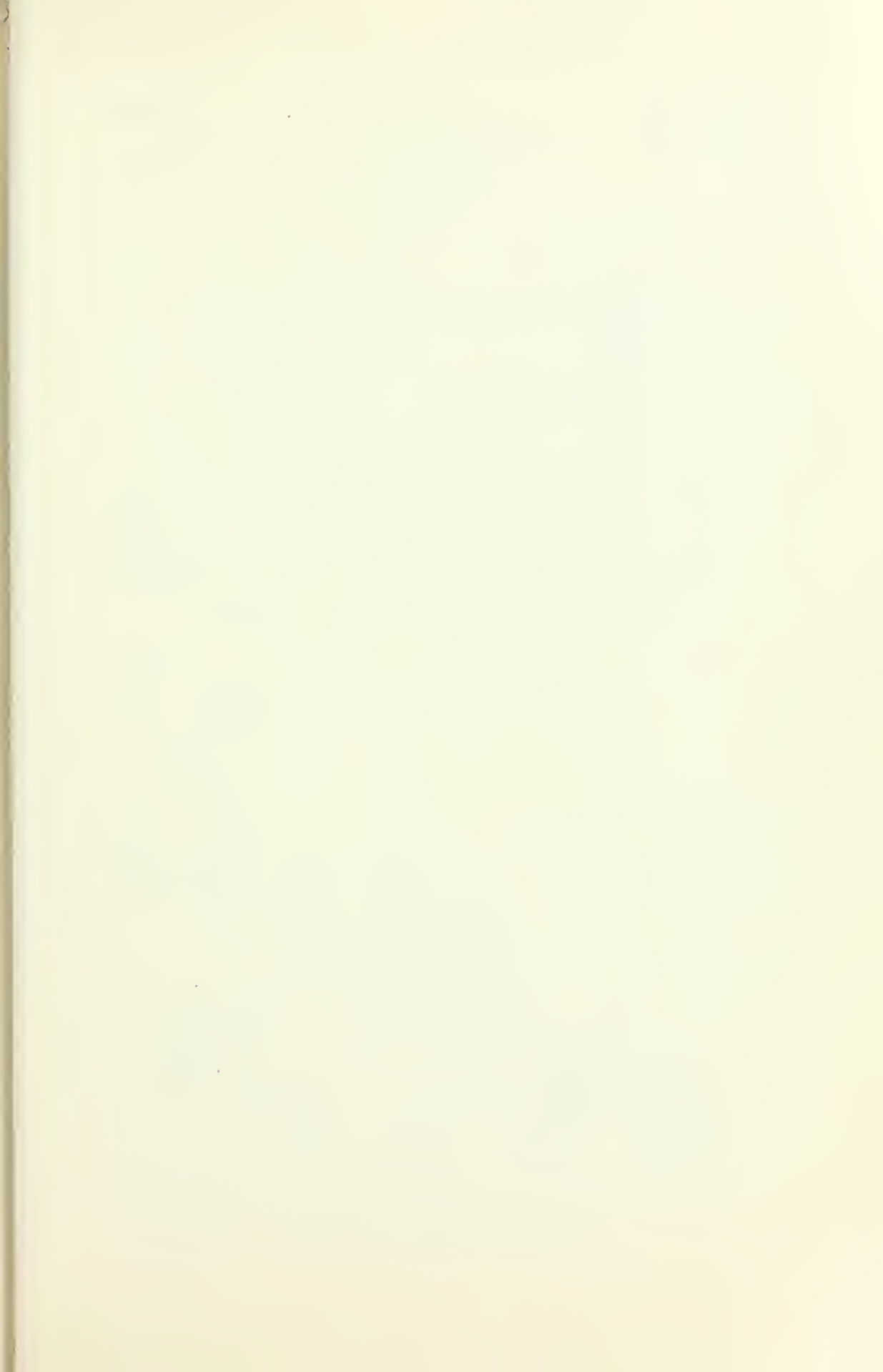


FIG. 16.

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MANUFACTURE OF SLIDE FASTENERS

Filed June 22, 1938

7 Sheets-Sheet 6

FIG. 18.

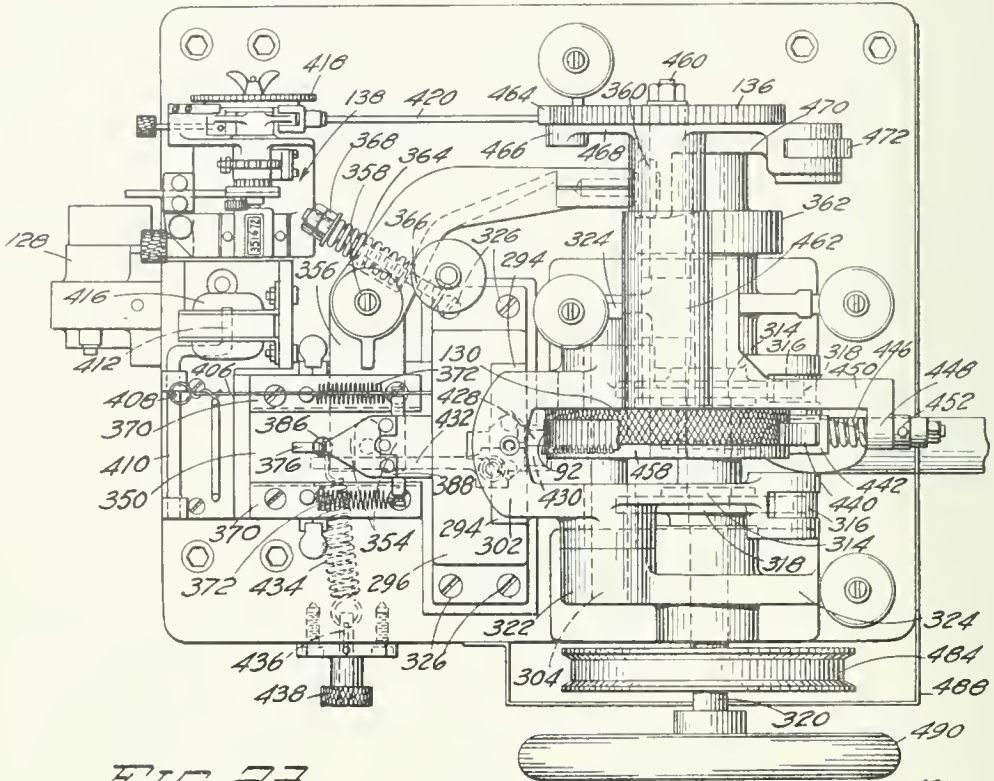


FIG. 23.

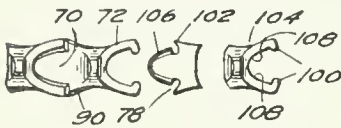
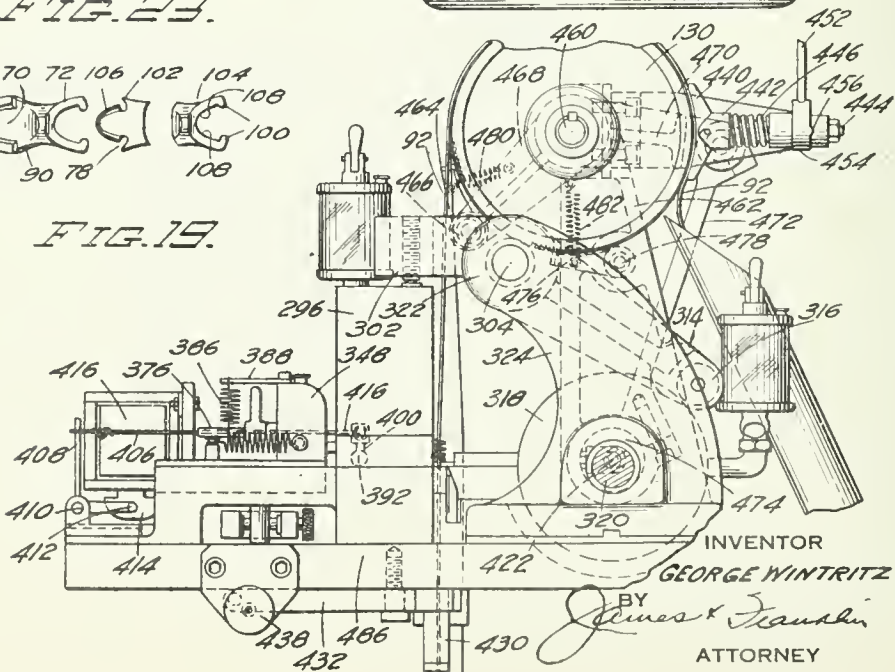
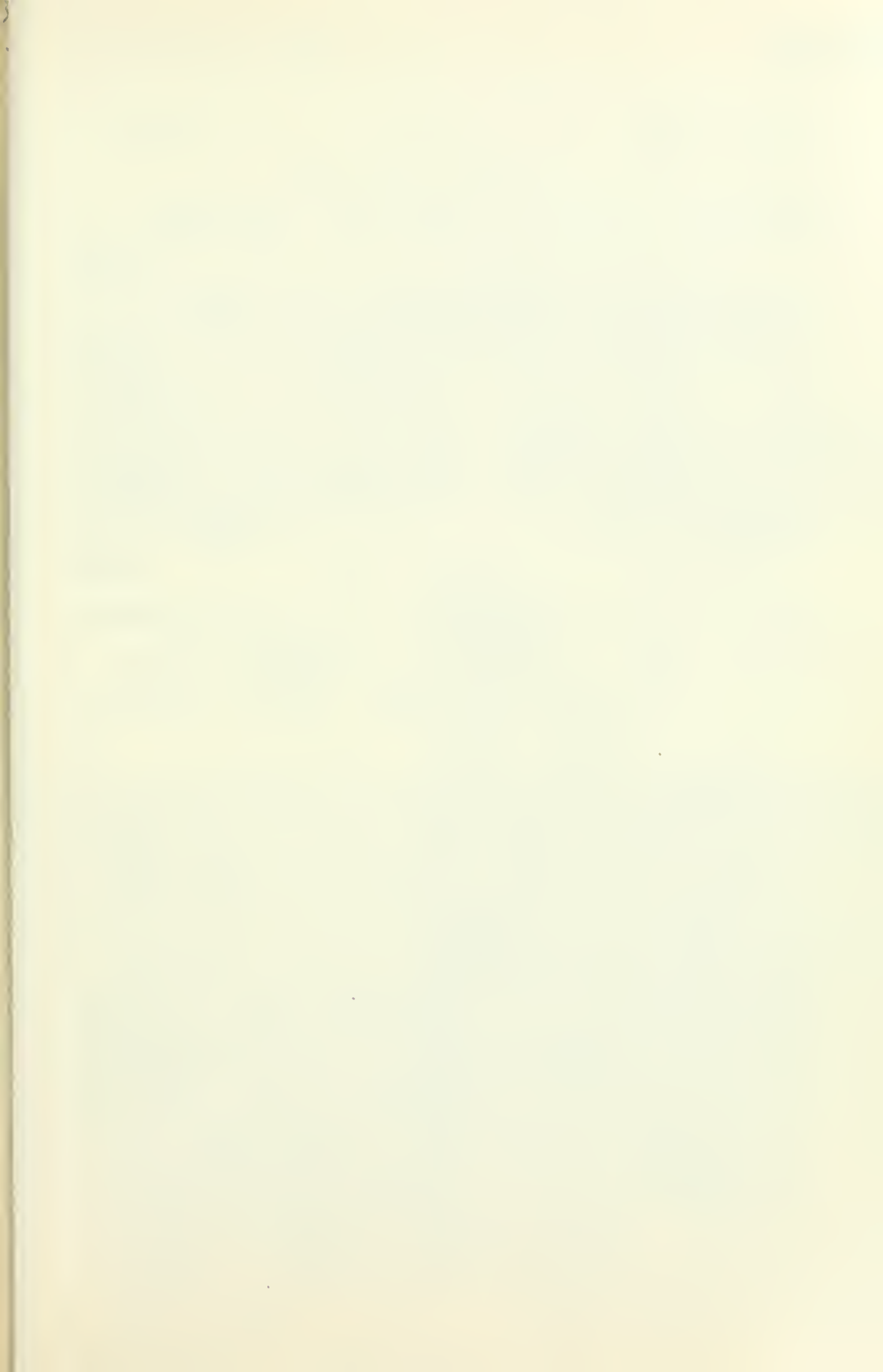


FIG. 19.



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Disclaimer

2,201,068.—*George Wintritz*, Staten Island, N. Y. MANUFACTURE OF SLIDE FASTENERS. Patent dated May 14, 1940. Disclaimer filed Mar. 8, 1949, by the assignee, *Conmar Products Corporation*.

Hereby enters this disclaimer to claims 43, 44, 45, 47, 48, 49, 50, 51, and 52 of said patent.

[*Official Gazette April 19, 1949.*]



UNITED STATES PATENT OFFICE

2,201,068

MANUFACTURE OF SLIDE FASTENERS

George Wintritz, Staten Island, N. Y., assignor
to Conmar Products Corporation, Bayonne,
N. J., a corporation of New Jersey

Application June 22, 1938, Serial No. 215,180

54 Claims. (Cl. 153—1)

This invention relates to the manufacture of slide fasteners.

The primary object of my invention is to generally improve the manufacture of slide fasteners, and more particularly, to simplify, cheapen, and speed up the manufacture of the same.

Practical commercially-used methods of making slide fasteners may be generally sub-divided into methods using two machines, the elements being made in one machine and mounted on the tape by another; and methods using a single machine in which the elements are both manufactured and attached to the tape. With two machines it has heretofore been necessary to hopper the loose elements in order to arrange the same in uniform position. This difficulty is avoided when the elements are made and attached in a single machine, but then the apparatus is less flexible for meeting varied commercial requirements. This is so because with two machines it is possible to manufacture and store up a supply of elements and to later mount the same on tapes in accordance with orders received, thus accommodating requirements which vary from day to day as regards stringer length, tape color, tape quality, and so on. At the same time, the manufacture of the elements in the first machine is facilitated because the machine may be run at best speed for making the elements without regard to the speed at which the elements may be mounted on the tape, and the tools for making the elements may be replaced or sharpened or repaired whenever necessary, without interfering with the operation of the second machine. Moreover the first machine may operate continuously, without the numerous interruptions which occur in the second machine, particularly for spacing between stringers.

One object of my invention is to overcome the disadvantages of both the single and double machine systems of the prior art, while retaining the advantages of each. For this purpose, I form a connected series of embryo elements from wire or like continuous stock. The embryo elements themselves form a continuous wire, and this "element wire" is a true step product which is reeled and stored in lengths of a mile or more. The reel may be unreel and fed to a separate machine for merely severing the elements and attaching the same to the tape. In this way, the advantages of using two machines may be obtained without necessitating handling and hopping of loose elements.

Still another object of my invention is to make possible the use of simple round wire

stock, thus minimizing the cost of the raw material, and a further object is to reduce the amount of scrap or waste of stock. Both of these factors contribute to lower the cost of manufacture of the slide fastener.

A further object of my invention is to obtain elements of uniform pitch, despite variations in the diameter, hardness, and "flowability" or ordinary commercial round wire stock. The round wire stock is not merely punched, but is pressed and deformed into a wholly new shape. If these elements are formed by successive reciprocations of a press, the speed of operation is slow, and an even more important difficulty arises because of irregularity in the pitch of the elements. It is very difficult to obtain uniform feed of the wire, and changes in pitch occur even with a uniform feed, because during its extensive deformation the material undergoes a substantial stretch or elongation, but this elongation may vary due to changes in either the diameter or hardness of the original round wire. This results in changes in the pitch or/and length of the elements, and such changes produce irregularities in the slide fastener which spoil the desired smooth, sliding action of the slider, and in extreme cases, may altogether prevent operation.

One primary object of my invention is to overcome this difficulty and to produce an element wire of uniform pitch. A further object of my invention is to greatly increase the speed of manufacture of the embryo fastener elements. These objects I fulfill by pressing and deforming the smooth round wire into the desired series of embryo elements by running the wire between rapidly rotating pressure rolls which are shaped negatively to the desired configuration of the embryo fastener elements. The wire is rolled to desired shape in a single passage through a special form of rolling mill. The rolling process insures uniform pitch, and any variations in hardness and diameter of the original wire manifest themselves as changes in the cross section rather than changes in the length of the elements in the rolled wire.

The embryo elements are formed with spread or divergent jaws. In accordance with my invention as applied to the specific form of fastener element disclosed herein, the jaws are unconfined at the outside, thus accommodating the changes in wire section. Moreover, there is the advantage of leaving the outside of the jaws in smooth, unmarred, and rounded shape. However, it is convenient to have the over-all or maximum breadth of the element wire constant, and to ac-

comply this is still another object of my invention. This is done by leaving the jaws uncon-
 fined except at the side where they are furthest
 apart. Ample room is provided in the roll for
 flow of excess metal, and changes in cross sec-
 tion occur, but the maximum width, at the side
 of the jaws, is held within a desired tolerance.

The shape of the element wire is complex, and
 the impressions to be formed therein are relative-
 ly deep. Moreover, the necessary mutilation of
 the wire is so great that the wire is greatly elon-
 gated as it is pressed to shape, this elongation
 being, say, one-third, for the specific form of
 element wire disclosed herein, that is, the length
 of a reel of this specific element wire is approx-
 imately one-third greater than the length of the
 reel of uniform wire from which it was made. It
 is therefore difficult to obtain clean accurate
 shaping of the wire when rolling the same. I
 have found that the desired result may be at-
 tained by using pressure rolls of very small di-
 ameter. More specifically, the pressure rolls
 should be less than two inches in diameter, and
 I prefer and recommend rolls which are only
 about one inch in diameter.

While this may be considered an empirical dis-
 covery without regard to theory, I believe that
 one main advantage of the small diameter rolls is
 in order to avoid confinement of more than a
 very few elements at one time, thereby avoiding
 difficulty arising from the elongation of the wire
 being rolled, which otherwise puts such a strain
 on the impressions in the rolls that they tend to
 crack and break. Furthermore, the small roll
 may be operated with less force because it con-
 tacts with only a small length of wire at one time,
 and this is important when seeking a high unit
 pressure for the substantial deformation needed
 to produce the embryo slide fastener elements.

The operation requires the use of exceedingly
 high pressure on the rolls, and further requires
 the application of a powerful torque for rotating
 the rolls. It is therefore important to employ
 shafts, bearings, and gears which are all massive
 in size, and sturdy in construction, these parts
 being very much larger than the relatively tiny
 hardened pressure rolls which, as previously ex-
 plained, are preferably only about one inch in
 diameter. It is accordingly a further object of
 my invention to reconcile these conflicting re-
 quirements and to provide a suitable machine
 particularly adapted for the rolling of the ele-
 ment wire.

I have already mentioned speed of manufac-
 ture as a general object. It will be understood
 that by this rolling process, the embryo elements
 may be made at very high speed despite the fact
 that the rolling mill is the heavy duty part of the
 apparatus. The attaching machine is a light
 duty machine, for it need merely sever and at-
 tach the elements to the tape and may therefore
 be run at high speed. I have developed a com-
 paratively small and inexpensive machine for
 this purpose which may be run at a speed more
 than double the speed heretofore possible in slide
 fastener manufacture. Even greater improve-
 ment in speed is obtained in the rolling mill,
 and in actual plant operation the element wire
 for four or five attaching machines is readily
 supplied from a single rolling mill.

In the specific form of element wire here dis-
 closed the space between the spread jaws and
 extending to the head of the next embryo ele-
 ment is filled with metal which is subsequently
 punched out in the attaching machine. In ac-

cordance with a feature and object of my inven-
 tion, much of this metal is made comparatively
 thin to reduce waste. Moreover, a thin web
 makes possible a desired slope at the end of the
 head, so as to produce a triangular rather than a
 rectangular profile.

Further objects of my invention center about
 the rolling machine, and are to provide axial and
 rotational adjustment of one of the pressure rolls
 relative to the other in order to obtain registra-
 tion of the rolls, and to obtain a micrometric pre-
 cision adjustment of the spacing between the
 rolls so that this spacing may be varied slightly
 when necessary or desirable because of substan-
 tial change in the dimension or character of the
 round wire stock. Another object is to provide
 means facilitating movement of one of the main
 bearing housings out of the way of the other,
 thereby clearing each of the rolls from the oppo-
 site bearing in order to make it possible to remove
 the rolls.

Still further objects of my invention center
 about the attaching machine, and one such ob-
 ject is to provide a loop of slack wire between the
 heavy reel of wire and the feed means of the at-
 taching machine, said slack being maintained be-
 tween desired limits by a suitable intermittently
 operated motor for unwinding the reel. Other
 objects are simplicity and high speed, for which
 purposes I operate a severing punch, clamping
 jaws, wire feed means and tape feed means all
 from a single main cam shaft, while keeping said
 reciprocating parts small and light and short in
 stroke. Another object is to provide a feed dog
 which engages the wire at a point just ahead
 of and very close to the severing punch. An-
 other object is to interrupt the feed of the ele-
 ment wire to the tape when providing a blank
 space of tape between stringers, and this is done
 by means of a counter controlling a solenoid,
 in the specific case here illustrated, which ele-
 vates a check dog associated with the feed dog
 for the element wire. Still another object is to
 bring the inside of the spread jaws of the ele-
 ments to desired shape after they have been only
 roughly shaped by the rolling mill, and this is
 done by means of the severing punch. This, in
 the specific case here illustrated cuts away the
 web of waste metal between elements, said punch
 being so shaped as to also cut away some of the
 metal inside of the jaws, in addition to the web,
 and thereby bring the jaws to the desired shape.

To the accomplishment of the foregoing and
 other objects which will hereinafter appear, my
 invention consists in the method steps and appa-
 ratus elements and their relation one to the
 other, as hereinafter are more particularly de-
 scribed in the specification and sought to be de-
 fined in the claims. The specification is accom-
 panied by drawings in which:

Fig. 1 illustrates the rolling mill and associated
 apparatus for deforming wire stock into the de-
 sired series of elements;

Fig. 2 is an elevation of the same;

Fig. 3 is a section through the pressure rolls
 and is explanatory of the operation of the same;

Fig. 4 is a plan view of a piece of round wire
 stock showing the manner in which it is de-
 formed to produce the embryo elements;

Fig. 5 is a side elevation of the same;

Fig. 6 schematically illustrates a preliminary
 step in the finishing and attaching of an element;

Fig. 7 illustrates the final steps in the finishing
 and attaching of an element;

Fig. 8 is a plan view of the attaching machine;
 Fig. 9 is an elevation of the same;
 Fig. 10 is a partially sectioned elevation of the rolling mill;

Fig. 11 is a horizontal section taken in the plane of the line 11—11 of Fig. 10;

Fig. 12 illustrates the lower pressure roll and bearing as seen when the upper bearing is tilted out of the way;

Fig. 13 is a partially sectioned side elevation of the rolling mill;

Fig. 14 is explanatory of the rotative adjustment of the rolls;

Fig. 15 is explanatory of the axial adjustment of the rolls;

Fig. 16 is an end elevation of the rolling mill;
 Fig. 17 is a partially sectioned elevation of the opposite end of the rolling mill;

Fig. 18 is a plan view of the attaching machine;

Fig. 19 is a side elevation of the same;

Fig. 20 shows a part of the attaching machine in plan to enlarged scale;

Fig. 21 is a section taken in elevation through a part of the attaching machine drawn to enlarged scale;

Fig. 22 is a detail of the feed check dog;

Fig. 23 illustrates the scrap or waste which is punched away during finishing and attaching of the elements to the tape;

Fig. 24 is explanatory of the design of the female roll, and

Fig. 25 is a section on the line 25—25 of Fig. 24.

Referring to the drawings, and more particularly to Figs. 1 through 9, a reel A of uniform wire is fed through a special form of rolling mill B which deforms the wire into a connected series of embryo elements, which may for brevity be referred to as "element wire." This element wire is wound up on a take-up reel C. The pressing of the wire in the rolling mill is schematically shown in Fig. 3. The nature of the change produced in the wire, that is, its conversion from a simple round wire 12 into the element wire 14, is illustrated in Figs. 4 and 5. The reel C of element wire may be stored away until needed, and when needed, is mounted in front of an attaching machine D, as is clearly shown in Figs. 8 and 9. This machine completes the elements and attaches the same in properly spaced relation along the edge of a tape.

Considering the method of the invention in somewhat greater detail, and referring first to Figs. 1 and 2, a reel of ordinary commercial wire stock is placed on a rotatable table 16 carried on a stand 18. The wire is preferably ordinary round wire and is therefore inexpensive compared to stock of special cross-section. The reel is centered on the table by guides 20, and is held in original compact condition by spokes 22 adjustably mounted on guides 20. The radial position of the guides is adjustable in slots 24 and is maintained by elamps 26. It may be mentioned that when the reels of wire are purchased on wooden reels, the wire may be unwound directly from the wooden reels, and in such case it is not necessary to mount the reel on a vertical axis, it being more simply mounted on a horizontal axis.

The wire next passes through a lubricating station 28 and then through horizontal and vertical sets of straightening rolls 30 and 32. The wire then passes between the pressure or forming rolls. For reasons explained in greater detail hereinafter, these rolls are relatively tiny, having a diameter of, say, one inch, but they are pressed against the wire with such a high pressure that

they are mounted in massive shafts having a diameter far greater than that of the rolls themselves. These shafts are carried in massive bearings 34 and 36 which extend in opposite directions away from the rolls. The shafts are geared together through an appropriate countershaft and heavy gearing, the gearing being concealed in Figs. 1 and 2, by guards 35 and 37, but exposed in Figs. 10 through 17 of the drawings. The rolling mill is driven by a motor 38. The formed wire leaving the mill is wound up on reel C, this being rotated by a pulley 40 driven through belt 42 by a motor 44. The element wire is moved slowly back and forth over the surface of the reel C in order to wind the wire up in smooth successive layers. This is done by means of a two-way screw 46 which reciprocates a nut 48 back and forth, said nut carrying a guide for the element wire. Screw 46 is driven by a pulley 50 which in turn is operated through belt 52 by means of a pulley 54 mounted on the shaft 56 carrying the reel C and pulley 40 previously referred to. Shaft 56 and feed screw 46 are both carried on a suitable stand 58.

Referring to Fig. 3, the upper pressure roll 60 is formed negatively to one side of the element wire 14, while the lower pressure roll 62 is formed negatively to the other side. The pitch diameters of both rolls are equal, but in the specific case here illustrated the apparent diameters differ, this being so because I treat the upper roll 60 as a female roll having depressions formed therein, and I treat the lower roll 62 as a male roll having protuberances projecting therefrom. In respect to the operation upon the wire, however, the rolls may be considered to be and are equal in diameter and are therefore rotated at equal rotative speeds to produce equal linear speeds. It will be understood that when there are apparently unequal diameters, as here shown, there is preferably a little clearance between the peripheries 64 and 66 of the rolls, so that they do not actually engage one another in rolling contact.

Referring now to Figs. 4 and 5, the embryo elements comprise an embryo head portion 70 and spread or divergent embryo jaws 72. The head portion 70 is conventional in comprising a projection 74 and a recess 76. The embryo elements all point in one direction and this direction is head first when leaving the rolling mill, so that the embryo elements are wound up on the reel pointing head first. The main reason for this is so that they will be unwound pointing jaws first, this being of particular convenience in connection with the operation of the attaching machine, as will be subsequently described. The embryo jaws of one embryo element are connected to the embryo head of the next embryo element, and in the specific case here illustrated the connection is by means of a web of metal 78. The web is made relatively thin in order to minimize the amount of waste stock produced when finishing and serving the elements.

The metal is not truly confined at the outsides of the embryo jaws, and no fin is produced at this point. Referring to Fig. 24, I show a development of the female roll, and may emphasize the existence of spaces 80 and 82 outside the element strip 84 (only the outline of which is shown). I have made and successfully used many rolls in which the outside of the cavity is intentionally disposed at great width, as is indicated by the broken line outline 86. In such case, there is obviously no confinement whatsoever at the outside of the jaws of the elements as they pass

through the rolling mill, and any variation in diameter or hardness or flowability of the wire (for the wire may vary in flowability even while showing the same apparent hardness by Rockwell test, due to differences in the annealing treatments when drawing the wire) is taken up by a change in breadth of the element wire, there being no substantial change in pitch or element length. With the side wall of the cavity defined by line 88 instead of line 86, substantially the same result is obtained, for there is ample space in which excess metal may flow, as is shown in plan at 80 and 82 in Fig. 24, and as shown in section at 81 and 83 in Fig. 25. Fig. 25 also shows how the outside walls of the jaws are left with a rounded surface, resulting in a smooth-feeling and easy sliding fastener.

The advantage of producing a slight confining effect at the outside of the jaws, as by means of the wall 88, is that the outside or maximum width of the element wire is maintained constant, and this is of convenience when subsequently handling the wire in the attaching machine, in order that the wire may be fed between and accurately guided by suitable guides engaging the side edges of the element wire. The slight confinement produced by the straight walls 88 is not sufficient to materially mold or change the configuration at the outside of the jaws, and is not such as will produce a fin, the jaws being left as smooth and unmarred by fin as when using rolls having the widely spaced walls 86.

The metal is confined, however, at the heads 70, and this produces a slight fin indicated by the broken line at 90 in Fig. 24. The fin is also indicated at 90 in Fig. 4. The presence of this fin depends upon the diameter, etc. of the wire, and is of no great consequence because it is thin, and readily bent over when the completed slide fastener is run through calibrating rolls which are customarily used in this art somewhere near the end of the manufacturing process.

Referring now to Figs. 6 and 7, the element wire 14 is unwound from the reel with the embryo elements pointing jaws first. A tape 92 of conventional character is supported and arranged for intermittent feed movement in a direction transverse to the direction of movement of the element wire 14. The edge of tape 92 is provided with the conventional bead or cord, this being formed in the present case by stitching two cords 94 on opposite sides of the edge of the tape. The element wire is fed forwardly until the spread jaws 72 of the leading element are placed astride the edge of the tape. The apparatus is provided with clamping plates 96 for closing the jaws 72 on the tape, this step being indicated in Fig. 7. The attaching machine is also provided with a punch 98 so shaped as to cut away the waste metal between the elements and thus sever the endmost element from the remainder of the element wire, as is shown in Fig. 7. After the element has been attached to the tape, the tape is moved longitudinally an amount equal to the spacing between elements. The element wire 14 is then advanced longitudinally until the next element is placed with its jaws astride the tape, as shown in Fig. 6. The element is then severed and attached, and this operation is repeated until the desired length of stringer is obtained. It will be observed that the shape of punch 98 is such as to finish shaping the jaws, including the small projections or hooks 100 at the ends of the jaws. The embryo elements in the element wire have

only embryo jaws, which are not really in finished shape. The desired configuration is too complex to be produced in a simple rolling operation. However, by causing the punch 98 to cut away not only the thin web 78, but also some of the thicker sloping wall therearound, the jaws may be brought to desired final shape. This is illustrated in Fig. 23 in which the number 102 designates a piece of waste metal or scrap struck from the element wire to form the finished element 104. It will be noted that the piece 102 has a flange of metal 106 surrounding the web 78. This results from trimming the jaws to the final configuration shown at 108 and including the hooks 100. The severing operation shapes the head end of one element and the jaws of the next succeeding element.

The severing operation and jaw closing operations are performed almost simultaneously, for the attaching machine works at very high speed. The element may be severed from the element wire before or after attaching the same to the tape. I have practiced the invention both ways and there are certain advantages attendant upon either. When the element is attached first, it may be tilted at an angle, when the punch is dull, or due to a bend in the element wire. When the element is severed first, it may be swung laterally to an improper angle due to greater strength in one of the two jaws, as when the jaws have not been cut perfectly symmetrically. This is avoided when the element is severed last, for the element is supported during the jaw closing operation by its attachment to the element wire. The timing of the punch, and the punch location in the particular apparatus here disclosed is such that the jaws are closed slightly ahead of the severing operation.

Referring now to Figs. 8 and 9, the reel C is mounted on a shaft 110 carried on a stand 112. Shaft 110 is provided with a pulley 114 and this is connected through a belt 116 to a pulley 118 driven through worm reduction gearing 120 by a small motor 122. Motor 122 functions to wind element wire 14 off reel C, thus providing a freely hanging loop of wire between the reel and the attaching machine D in order that the latter may function without any strain or resistance such as would be caused if the feed mechanism of the attaching machine had to physically turn the comparatively large, heavy reel C. No attempt is made to run the motor 122 at exactly the right speed, and this would in any event be a difficult task because the diameter of the reel changes as the wire is unwound, and the requirements of the attaching machine vary as the space between successive stringers is reached. As will be understood by those skilled in the art, the stringers are ordered in lengths specified by the user of the same, and these lengths may vary anywhere from a few inches to several feet or even yards. A waste piece of tape is desired at each end of the stringer in order to facilitate attachment of the slide fastener to the purse, luggage, clothing, or other article on which it is being used. It is customary to make the stringers on a continuous tape with spaces or interruptions between successive stringers. Ordinarily a space of two or three inches is left without fastener elements, between successive stringers, and these spaces are produced by interrupting the feed of element wire to the attaching machine.

Because of these difficulties, I maintain the

desired slack or loop of element wire between the reel C and the attaching machine D by means of a feeler arm 124 which rests lightly on the element wire and the end of which is pivoted on the attaching machine at 126. It is there connected to a mercury or other suitable switch carried in housing 128, and this switch controls the operation of wind-off motor 122. The motor is set into operation whenever arm 124 rises to a desired point, and is stopped when arm 124 sinks to a desired lower limit. In this way a loop of slack wire is maintained between the upper and lower limits defined by arm 124 and its associated switch.

The attaching machine will be described in greater detail hereinafter, but at this point it may be briefly pointed out that the tape rises vertically past the attaching station and is turned about a feed drum 130 from which the finished stringer is led downwardly through tube 132 into a basket 134. The drum 130 acts as a feed means for the tape and is itself intermittently turned by a ratchet wheel 136 operated on by a suitable feed dog. The stringer length is determined by a suitable counter 138, and at appropriate intervals determined by the counter 138, the feed of the element wire is interrupted, while the feed of the tape proceeds as before, thus producing the desired spaces between stringers. The counter 138 may be of the type discussed in a co-pending application Serial No. 214,254 filed June 17, 1938, now Patent No. 2,167,259, issued July 25, 1939.

The preferred forms of apparatus used in the practice of my invention are more fully described hereinafter.

The rolling mill

The general arrangement and operation of the rolling mill has already been described with reference to Figs. 1, 2, 3 and 24. The details of the rolling mill itself are now described with more particular reference to Figs. 10 through 17 of the drawings. Referring to those figures, the upper roll 60 is formed with a conical shank 140 (Fig. 13) received in a matingly tapered member 142 which is itself received with a tapered fit in a main shaft of massive dimension 144. Shaft 144 is carried in a tapered roller bearing 148, this bearing functioning to prevent axial movement as well as to take the direct radial thrust of the roller. The outer end of shaft 144 is carried in a ball bearing 148, this bearing being subjected primarily to radial thrust. The bearings are carried in a massive bearing housing 150 the ends of which are closed by bearing caps 152 and 154. These are provided with leather oil seals 156. The outer race of bearing 146 is held in place by bearing cap 152. The inner races are held in place by nuts 158 and 160 threadedly received on the main shaft and held against relative rotation by the oppositely bent tabs of a suitable lock washer 162. Bearing 148 is held in place by collar 164. The roll 60 is internally threaded and is drawn into the main shaft carrying the same, by means of a suitable draw bolt 166 the head 168 of which is exposed at the end of the machine.

The lower roll 62 is carried in the same way in a similar main shaft which in turn is carried in the same way in similar tapered bearings and ball bearings. These bearings are carried within a massive bearing housing 170 the ends of which are closed by bearing caps 172 and 174. Insofar as the bearing housings differ from one another in order to make possible certain desirable ad-

justments, these differences and the reasons therefor will be pointed out hereinafter. At this time I shall proceed with a description of the main driving elements of the rolling mill. Referring to Fig. 10, the shaft of lower roll 62 has a gear 176 secured to its outer end. This gear meshes with a pinion 178 carried on a countershaft 180. Countershaft 180 extends through the elevated base 182 of the machine and carries pulleys 184 which are belted to the driving motor of the rolling mill. Hand wheel 186 is provided for use during adjustment of the machine.

The opposite end of countershaft 180 carries a pinion 188 meshing with an idler pinion 190 which in turn meshes with a gear 192 carried at the outer end of the main shaft of upper roll 60. The relation of pinion 188, idler 190 and gear 192 will be clear from inspection of Fig. 16. This may be compared with Fig. 17, showing a direct engagement between pinion 178 and gear 176 at the opposite end of the machine. Pinions 178 and 188 are preferably identical in pitch, diameter and number of teeth, and the same applies to the gears 176 and 192. The rolls are therefore driven at equal rotative speeds but in opposite directions, due to the effect of the direction-reversing idler 190. The desired clearance between the teeth of pinion 188 and gear 192 is obtained because of the difference in elevation of the rolls 60 and 62, the idler 190 being associated, of course, with the upper roll.

It will be seen that with the arrangement here disclosed, the rolls may be small in diameter, yet may operate on the wire with a tremendous pressure and torque obtained by mounting the rolls in massive shafts and bearings having a diameter many times that of the rolls and driving the same through massive gearing made possible through the indirect countershaft drive.

For most efficient operation, it is desirable to provide for relative adjustment of the rolls in order to bring the impressions therein into perfect registration. I provide for rotative adjustment, axial adjustment, and for radial adjustment of the spacing between the rolls.

The rotative adjustment may be explained with reference to Figs. 13 and 14 of the drawings. Gear 192 is not secured directly to the main shaft 144. Instead, it is carried on a sleeve 194 keyed to main shaft 144 by means of key 196. Sleeve 194 is flanged at 198, and this flange is provided with a series of slots 200 best shown in Fig. 14. A ring 202 is placed over flange 198 and the flange is locked between ring 202 and the hub of gear 192 by means of bolts 204. It will be understood that by loosening the bolts 204, it is possible to oscillate gear 192 relative to roll 60, and when the rolls 60 and 62 have been brought in proper rotative registration, the bolts 204 are tightened to lock the parts together. The final test of proper registration, is, of course, obtained by examination of the wire emerging from the pressure rolls.

axial adjustment of the rolls is obtained by affording axial movement of the entire bearing housing 150. Referring to Figs. 13 and 15, the bearing housing is guided during its axial movement by a special key or guideway 206 secured by bolts 208 onto the top of base 182 of the machine. Precision and controlled movement of the bearing is obtained by means of a micrometer screw 210 turned by a head 212 carrying a scale 214. The head is formed integrally with the scale and is much like a control knob, but is flattened at the sides, as is best shown in Fig. 15,

thus adapting the same for use with a wrench. Micrometer screw 210 turns in a matingly threaded block 216 (Fig. 15) which is secured in place on the end of base 182 by means of mounting screws 218. The location of block 216 on the machine will be clear from inspection of Fig. 16, and in that figure it will be observed that this block is made small enough in dimension to fit between the teeth of gear 192 and pinion 188. The dial 214 is located outside the teeth of the gear, as will also be clear from Fig. 13.

The micrometer screw 210 is secured to bearing 150 by means of a connecting bolt 220 screwed into a block 222 depending from one end of the bearing where it is mounted in place by screws 224. The head 226 of bolt 220 is received within the head or knob 212, and when the bolt 220 is screwed tightly into block 22, the micrometer screw 210 is locked against rotation. When the axial adjustment is to be changed, the locking screw 220 is first loosened and the micrometer screw is then turned inwardly or outwardly a slight amount, depending upon the desired adjustment. The locking bolt 220 is then again tightened, thus bringing the bearing to proper position and at the same time locking the adjustment of the micrometer screw. It will be understood, of course, that at this time the main bolts mounting the bearing on the base are slack, and after the desired adjustment is obtained, these bolts are tightened. The mounting bolts in question are best shown at 226 in Fig. 11.

The third adjustment is an adjustment of the spacing between the rolls. This determines the degree of deformation of the wire and is a very important adjustment. The two adjustments already described are made only when fitting new rolls into the machine. The present adjustment, however, must often be made when changing from one reel of wire to another, and even in the course of rolling a single reel of wire, due to changes in diameter, hardness and flowability of the wire, and even changes in temperature, because when first starting up the machine the rolls are cold, whereas after a period of operation the rolls are hot. The adjustment is also of value in compensating for the wear of the rolls as they become old.

In the present machine, this adjustment is made possible by pivotally mounting the bearing housing 170 for movement about an axis 230 extending transversely of the axis of roll 62. Axis 230 is located as near as possible to gear 176 and remote from roll 62. It intersects the axis of roll 62. With this location, vertical adjustment of the roll does not change the axial adjustment of the rolls, nor is there any appreciable change in angularity. At the same time, vertical movement of gear 176 is minimized so that there is no appreciable change in the meshing of the bearing. It may be kept in mind that the movement sought by this adjustment is a matter of only one or a few thousandths of an inch.

The adjustment is obtained by means of a pressure screw 232 best shown in Fig. 13, this pressure screw being carried by an extension 234 of the base of bearing housing 170. It will be noted that the screw is located not merely beneath but beyond the rolls, thus causing the reactive force at the axis 230 to be a downward force which in turn is taken up on pedestals extending upwardly from the base of the machine. The lower end of the screw 232 bears against a hardened block 236 resting on the base 182 of the machine.

Referring to Figs. 11, 12 and 13, the pressure screw 232 carries an arm 238 at its upper end, and this arm is in turn connected to an adjusting screw 240 the inner end of which is connected to arm 238 by means of a self-aligning bearing 242. The outer end of screw 240 is provided with a scale 244. Adjusting screw 240 is reciprocated by means of a matingly threaded nut 246 (Fig. 11) formed integrally with a sleeve 248 surrounding scale 244. A conveniently manipulatable knurled adjusting handle 250 (Figs. 16 and 17) is secured to sleeve 248. The sleeve and nut are carried in a self-aligning ball bearing 252. It will be understood that on rotating handle 250, the adjusting screw 240 is moved axially and functions to slightly oscillate arm 238, which in turn slightly rotates the pressure screw 232, thereby changing the spacing between the rolls. A very fine adjustment is obtainable because several revolutions of the adjusting handle may be used to move a single division on the scale 244, and a single division on scale 244 results in a change of center to center distance between rolls of only one-thousandth of an inch. This mechanism affords a convenient precision adjustment which is self-locking because of the use of screws.

Bearing housing 170 is pivoted in the following manner. The housing has blocks 254 secured thereto, as by means of bolts 255, these blocks being turned to semi-cylindrical configuration on the lower side to act as the upper half of trunnion bearings (see Figs. 13 and 17). The base 182 of the machine has a pair of bearing pedestals 256 most clearly shown in Figs. 10, 11 and 17, though the upper end of one of the pedestals is visible in Fig. 13. Trunnion bearing blocks 257 are bolted to the upper ends of pedestals 256, as is best shown in Fig. 13. Blocks 257 are turned on their upper side to approximately semi-cylindrical configuration. Cylindrical pins or loose trunnions 230 are disposed between the trunnion bearing blocks 254 and 257. There is a small space between the blocks, they being held apart by the pins 230, as is clearly shown in Fig. 13, and this affords the desired oscillatable mounting of bearing housing 170 about the pins 230.

Pins 230 are held within the bearing blocks 254 and 257 because these blocks are closed at their outer ends, as is best shown at 258 in Figs. 10 and 17. The bearings are held together by a split collar 260, and this is received in a mating groove, as is best shown in Fig. 17. These collars are not relied upon to prevent sideward movement of the main bearing, for that is fixed in location with the aid of a large key or guide 262 best shown in Fig. 13.

The arrangement of the parts is such that the forces developed at adjusting screw 232 and at the pressure rolls, tend to force the outer end of bearing housing 170 downwardly against trunnion pins 230 and pedestals 256. It is for this reason that the bearing housing has its trunnion block 254 acting as the upper half of the bearing, and it is also for this reason that the top of bearing housing 170 is reinforced by a web 264 extending transversely over the bearing housing between the supports for the trunnion bearing blocks 264.

As so far described, it would be impossible to remove the rolls from the machine, because the large massive bearings are in the way of any attempted outward axial movement of the rolls. This will be clear from inspection of Fig. 10. I 75

therefore arrange the machine so that one of the bearings, specifically the upper bearing housing 150, may be tilted or swung bodily out of the way of the lower bearing housing 170. For this purpose, the base of bearing housing 150 is formed with a projection 266 carrying a handle 268. Projection 266 acts as a bearing received between bearing ears 270 formed integrally with base 182. A pin 272 extends through bearings 266 and 270. After preliminarily removing the main attaching bolts 226 and the bolt 220 passing through the axial adjustment screw, handle 268 may be swung downwardly about pin 272, thus swinging the entire bearing housing 150 bodily out of line with bearing housing 170. It will be evident from Fig. 16 that the gearing does not interfere with this movement of bearing housing 150. Fig. 16 also clearly shows a stop projection 274 which is formed integrally with base 182 and which limits the tilting movement of the main bearing. The bearing housing fit at pin 272 is made very loose in order not to interfere with proper seating of the bearing housing on the base when the bearing housing is secured by the bolts 226, and referring to Fig. 11, it will be seen that the holes in bearings 270 are enlarged as indicated at 273, thus providing adequate clearance for this purpose.

Fig. 12 is a view looking toward the lower main bearing housing 170 when the upper main bearing housing has been swung out of the way. The pressure roll 62 may be removed after first preliminarily unscrewing the draw bolt holding the same in place, the head of this draw bolt being indicated at 276 in Figs. 10 and 17. Fig. 12 is also interesting in showing the comparatively tiny nature of the pressure roll 62 contrasted with the end of main shaft 144. This figure also shows a wire guide finger 278 which follows the last of the straightening rolls 32, and which leads the wire up to a point directly between the pressure rolls. Guide finger 278 is made of a lower channel portion and a cover plate 280 screwed thereon. The entire guide finger is carried in a suitable bracket 282 projecting upwardly from the base of the machine. The use of this guide finger is particularly important because it makes it unnecessary to provide the pressure rolls with a special channel for receiving the wire. It may be mentioned that the wire guide 278 should be removed before attempting to remove the pressure roll 62. Fig. 12 also shows a pair of guide wheels 284 which receive the element wire 14 as it leaves the pressure rolls.

I have found, after long experimentation and study of this problem, that best results may be attained by using pressure rolls of very small diameter (but, it goes without saying, not so slender as to break or shear off under the rolling load). More specifically, the pressure rolls should be less than two inches in diameter, and I prefer and recommend rolls which are only one inch in diameter. The permissible roll diameter theoretically varies somewhat with the size (really the impression depths) of the fastener elements being made, and the above specification is applicable to the manufacture of the most common size of slide fastener, that used on brief-cases, wind-breakers, or the like. The permissible roll diameter also varies with the ductility or deformability of the metal. A larger roll than above specified might be used with a metal such as aluminum or white metal alloys, which do not harden quickly when deformed.

But the metals actually used for slide fasteners,

such as zinc copper or nickel zinc copper alloys, harden quickly as they are deformed. There is benefit in quicker clearance of the parts of the roll from the part of the wire already rolled or formed.

Any discussion of the theory underlying the invention is offered by way of probable explanation and is not intended as a limitation of the invention which, if desired, may be considered to be an empirical discovery independent of underlying theory.

The attaching machine

The attaching machine is shown in a general way in Figs. 8 and 9, but is described in greater detail with reference to Figs. 18 through 22. Referring first to Fig. 21, the punch 98 referred to in connection with Fig. 7 is mounted on a vertically reciprocable ram 290 held normally in elevated position by a compression spring 292. The ram is carried and guided by adjustable ways 294 (Fig. 18) mounted in an upstanding block 296. The return spring 292 is housed within block 296, the upper end of the spring bearing against a stop pin 298, the shank 300 of which is secured in ram 290. The lower end of the spring bears against a part of block 296, as is clearly shown in Fig. 21.

The ram is forced downwardly by oscillation of a ram lever 302 pivotally mounted at 304. The driving force of the lever is applied to the ram through an adjustable stud 306 the lower end of which is preferably provided with the hardened insert 308, (Fig. 21) said insert bearing on the hardened block 310 mounted at the top of the ram. Referring to Figs. 18 and 19, it may be explained that lever 302 is bifurcated to clear the tape 92 and tape drum 130. The spaced depending arms 314 each carry a cam follower roller 316 riding on cams 318 which in turn are mounted on the main drive shaft 320 of the machine. It may be mentioned that the fulcrum pin 304 of ram lever 302 is made readily removable, and when the fulcrum pin is drawn out of the stationary bearings 322 of brackets 324, the ram lever 302 is removable from the apparatus, thereby making the ram and associated parts of the machine accessible. The block 296 is bodily elevatable after removing the screws 326 (Fig. 18), thus affording full access to the punch and feed dogs.

Punch 98 works in a die 328 (Fig. 21), and the punch is provided with generous guides or heels 330 (Fig. 20) which remain in engagement with the die even when the punch is elevated. The punchings or waste metal like the piece 102 shown in Fig. 23, fall through die 328 into a tube or chute 332, and thence into a suitable box beneath the machine.

In describing the process of the invention in connection with Figs. 6 and 7, it was explained that one main operation was the finishing and severing operation performed by the punch 98. The other main operation was the closing of the jaws of the element to clamp the element tightly on the beaded edge of the tape 92. This clamping operation is performed by clamping plates 96, best shown in Fig. 20 of the drawings. It will be seen that these plates are mounted on clamping levers 334 pivoted at 336 and provided at their opposite ends with cam follower rollers 338. These cam follower rollers cooperate with a symmetrically arranged cylindrical cam 340 which is mounted directly on the main drive shaft 320 of the machine. The cam is prefer-

ably arranged for positive movement of the clamping levers in both directions. The plates 96 are made separately because they are thin, hardened plates, their vertical dimension being limited by the necessity of operating on one element without interfering with the immediately adjacent element on the tape. It will also be understood that while the range of movement of the clamping plates is small, it is adequate to receive the end-most element of the wire with its jaws in widely spread or divergent condition.

Referring to Fig. 21, the element wire 14 is shown moving from left to right. It is intermittently moved in step by step fashion by means of a feed dog 342 carried at the end of a feed arm 344 pivotally mounted at 346, between bearings 348 projecting upwardly from a slide 350. Pin 362 is carried in the forked end 354 of a feed lever 356, best shown in Fig. 18. Referring to that figure, it will be seen that lever 356 is pivoted at 358 and carries at its remote end a cam follower roller 360 cooperating with a cylindrical cam 362 mounted on the main drive shaft 320 of the machine. Cam follower 360 is held against cam 362 by means of a compression spring 364 carried on a bolt 366. The inner end of the bolt is secured to the frame of the machine, while the outer end carries nuts 368 bearing against the outer end of spring 364. The inner end of the spring bears against a part of lever 356, and this tends to oscillate the lever in a clockwise direction.

Slide 350 is guided by appropriate rails 370. The pins 346 forming a part of the slide are normally pulled toward retracted position by means of pull springs 372 clearly shown in Figs. 18 and 20. This insures retraction of the feed dog despite the existence of play or lost motion in the feed linkage. The amount of movement of the feed dog is constant, and corresponds to the throw of the feed cam 362, and this amount may be made greater than the pitch between successive elements so long as it does not reach twice the pitch, for the extra motion is used up as lost motion behind the head of the next element to be fed. The terminal point of the element depends, therefore, on the location of the feed dog rather than its extent of movement, and this may be varied by varying the location of pin 352 in the forked end 354 of feed lever 356. Referring to Fig. 21, it may be seen that the bifurcations of the feed lever carry adjustable screws 374 bearing against pin 352. The final location of the element to be severed is determined with even greater precision by adjustment of a stop screw 376 the end of which bears against a stop pin 378 inserted in block 296. The adjustment of screw 376 is locked by means of a nut 380. Screw 376 may, if desired, be provided with a handle 384 to facilitate adjustment of the screw, this handle being secured in place by a suitable set screw.

The feed dog 342 is normally urged downwardly against the element wire 14 by means of a pull spring 386 best shown in Fig. 19. The upper end of this spring is carried on a stationary plate 388 secured to bearings 348, while the lower end of pull spring 386 is received on the outer or free end of the stop screw 376 previously referred to. Feed dog 342 is preferably shaped to fit around the element wire so as to help center the same, and also to fit against the head of the element when moving the same. It readily slides backwardly, however, over the head

of the next element during retraction of the feed dog.

The element wire is held against return movement by a check dog 390 best shown in Fig. 21. This dog is carried on a spindle 392 mounted in a block 394 disposed beneath the feed dog and stationarily mounted on the frame of the machine by screws 396, as is best shown in Fig. 20. Check dog 390 is inserted in spindle 392 and is locked in position by means of a set screw 398 passing axially through the shaft, as is shown in Fig. 20. Shaft 392 has an upstanding arm 400 to which is connected one end of a pull spring 402 the opposite end of which is connected to the frame of the machine at 404. In this way the check dog is urged in a clockwise direction as viewed in Fig. 21, thus holding it in engagement with the element wire. However, the dog is free to ride upwardly over the heads on the wire, as the wire is advanced by the feed dog. Return movement of the wire is, of course, effectually prevented by the check dog. The feed dog acts on the wire as near as possible to the punch, and the check dog is therefore located outside the tip of the feed dog.

Spacing between stringers is obtained by interrupting the feed of the element wire 14 while continuing the feed of the tape 92. This is done, in the specific machine here shown, by elevating the check dog 390 from the position shown in Fig. 21, to the position shown in Fig. 22. For this purpose the arm 400 of shaft 392 has connected to it a wire link 406 best shown in Fig. 20. Referring to Figs. 18 and 19, it will be seen that the link 406 is connected at its rear end to a pin 408 projecting upwardly from a rod 410 one end of which is bent to crank-shape at 412 where it is connected to the plunger 414 of a solenoid 416. Solenoid 416 is energized through appropriate switch contacts forming a part of the counter 138, the details of which are not material to the present invention and may be found in my co-pending application Serial No. 214,254, filed June 17, 1938, now Patent No. 2,167,259, issued July 25, 1939, previously referred to. For the present, it is sufficient to say that the counter is operated through a ratchet wheel 418 the dog of which is oscillated through a link 420 extending back toward the main shaft 320 of the machine and there connected on an eccentrically located pin 422 (Fig. 19). The counter is thus responsive to the number of revolutions of the machine, which in turn corresponds to the number of elements attached on the tape, and after a predetermined desired number of elements have been attached, the switch mechanism of the counter energizes solenoid 416, thus elevating the check dog 390 and permitting the element wire 14 to merely vibrate back and forth without feeding any new elements to the tape until the machine has continued rotating an additional number of times corresponding to the desired space between stringers, whereupon the solenoid 416 is again de-energized, check dog 390 is restored to normal position, and the severing and attachment of the elements to the tape proceeds as before until the desired stringer length has again been produced.

The beaded tape 92 is fed upwardly from beneath the machine as is shown in Figs. 19 and 21, it being loosely supplied from a basket. If desired, the basket may be located at a point away from beneath the machine, and in such case the tape is first fed to an elevated guide 424 (Fig. 9) whereupon it is fed downwardly and around an-

other guide beneath the machine and then upwardly through the punching die. The tape is guided through a closely fitting keyhole shaped slot in the die, best shown at 426 in Fig. 20. The tape is tensioned by squeezing it between stationary and movable blocks, the stationary block being indicated at 428 (Fig. 18) and the movable block at 430 (Figs. 18 and 19), said movable block being carried at the end of an arm 432 which is urged against the tape by a tension spring 434. The opposite end of the spring is connected to a screw 436 manually movable by means of a threaded handle 438. Normally the spring is under tension, but when it is necessary to start a new tape into the machine, the tension of the spring may be temporarily relieved by rotating handle 438.

The stringer of tape with elements secured thereto is twisted ninety degrees during its passage from the clamping station upwardly through bifurcated ram lever 302, and is then passed around the tape feed drum 130 (Figs. 18 and 19). This drum is preferably knurled (see Fig. 18) for better frictional engagement with the surface of the tape, the latter being held against the drum by means of a shoe 440 carried in the bifurcated end 442 of a bolt 444 around which a compression spring 446 is coiled. The bolt is carried in the end 448 of a bracket 450 projecting from one of the bearings 324 of the machine. The pressure may be released when desired, and when threading the machine with a new tape, by swinging lever 452, the hub 454 of which is provided with camming bumps 456 adapted to move the bolt and friction shoe against the pressure of spring 446. Tape feed drum 130 is cut away or recessed at one edge, as is indicated at 458 (Fig. 18) in order to clear the elements of the stringer, the operation of the drum being directly upon the web of the tape rather than upon the elements secured thereto.

Tape feed drum 130 is mounted on shaft 460 journaled in a stationary bearing 462 and carrying at its outer extremity a ratchet wheel 136. Ratchet wheel 136 cooperates with a feed pawl 464 (Fig. 19) pivotally mounted at 466 on one end of an oscillatable feed arm 468 which oscillates freely on shaft 460 between ratchet wheel 136 and bearing 462. The enlarged hub of feed arm 468 carries an oppositely directed arm 470 the outer end of which is forked and pivotally connected to a connecting rod 472. The lower end of connecting rod 472 is carried on an eccentric 474 mounted on the end of the main shaft 320 of the machine (though inside of the crank pin 422 for the counter). The proportioning of the parts is made such that the tape is advanced step by step an amount equal to the desired spacing between successive elements on the tape. Return movement of the feed drum is prevented by a holding dog 476 pivoted on bracket 462 at 478. The dogs 464 and 476 are held against the ratchet wheel by pull springs 480 and 482.

It will be seen from the above description and from the drawings that the severing punch, clamping jaws, tape feed pawl, wire feed dog, and counter are all operated in a simple and direct manner by the single main cam shaft 320, and that the reciprocating parts are kept short in stroke, and small and light compared, for example, to the reciprocating head of an ordinary punch press. The machine is therefore adapted for very high speed operation.

The main drive shaft 320 carries a pulley 484, (Fig. 18), and this is driven by a belt running to

an electric motor (not shown) mounted on the bottom of the base 486 of the machine. The motor and belt are concealed from view in Fig. 9 by a guard plate 488. The shaft 320 is preferably also provided with a fly wheel 490, which may be used when adjusting the machine, as a hand-wheel.

Advantages

It is believed that the method of my invention, as well as the construction and operation of a preferred form of apparatus for practicing the invention, and the many advantages thereof, will be understood from the foregoing detailed description thereof. Some of these advantages are reviewed hereinafter. The embryo elements are made in large quantity and at high speed in a piece of apparatus especially designed for that purpose, and are finished, severed and attached in another piece of apparatus. This leads to greater flexibility in manufacture and in meeting the requirements of customers and leads to greater efficiency of operation, for the rolling mill may operate continuously and without as many interruptions as are required in connection with the attaching machine. The number of machines may be properly adjusted in relation to the relative speeds thereof. Because the heavy work is done in the rolling mill, the attaching machine is a light-duty piece of apparatus and may be operated at very high speed. A speed several times the speed of any other slide fastener apparatus of which I am aware is readily obtainable. The rolling mill, however, is even faster, and this is all the more unusual because this is the heavy-duty part of the apparatus. The rolling mill may be operated at a speed corresponding to the manufacture of thousands of elements per minute. If the element wire were being formed in a reciprocating press, it is manifest that the press could not be operated at such an extremely high speed. The shaft would have to turn at the same high speed, whereas the mill shaft turns only a few hundred R. P. M. The output of the rolling mill is even greater than would be indicated by the above figures, because, as has previously been mentioned, there is no interruption of the rolling mill at the time that the attaching machine is interrupted to produce the spacing between stringers. For this reason it is readily possible to supply element wire for four or five attaching machines from a single rolling mill.

With the present invention it is possible to form relatively broad flat elements of conventional character from simple uniform round wire stock, thus minimizing the cost of the raw material. The amount of scrap or waste is reasonably small because the metal connecting the successive elements is reduced to a comparatively thin web. The element wire is formed throughout a continuous length or reel of stock, and reels carrying a mile or more of element wire are readily and conveniently handled by the above described apparatus.

The formation of the element wire in a rolling mill results in a substantially uniform pitch or spacing of the elements along the wire, and this is important for the production of a smooth running slide fastener. This uniformity of pitch is obtained while using ordinary commercial round wire stock which is subject to variations in diameter, hardness and flowability. The extensive deformation or mutilation of the wire in the rolling mill is accompanied by a stretch or elongation, but this elongation is accommodated

by using exceedingly small pressure rolls. These also have the advantage of producing a comparatively good shaping of the complex embryo elements, and of reducing the force between the rolls. A larger diameter roll would tend to insure absolute uniformity of pitch but raises other difficulties. The small diameter roll produces a very nearly uniform pitch which is adequate for making a smooth-running slide fastener. The pitch is very uniform indeed compared with the troublesome irregular pitch obtained when coining elements under the best of conditions in a reciprocating press. The element wire is formed in a single passage through the rolls, thus avoiding difficulties of registration which would arise because of successive elongations if the stock were passed through successive rolls. The rolling mill is so arranged that despite the tiny size of the rolls, they are carried in massive shafts and bearings and are driven by massive gearing. Rotational and axial adjustment of the rolls, as well as convenient precision adjustment of the spacing between rolls are all provided for.

The separation of the element manufacture into two parts as here disclosed eliminates the problem of hopping and assorting a mass of loose elements, this being a step which has always been troublesome because of the rather complex unsymmetrical nature of the elements with their divergent jaws. At the same time, the disadvantages of attempting to perform all of the necessary operations in a single machine are avoided.

This application is a continuation in part of my co-pending applications Serial No. 750,609, filed October 30, 1934, and entitled "Method and apparatus for making slide fasteners," and Serial No. 79,047, filed May 11, 1936, and entitled "Manufacture of slide fasteners."

It will be apparent that while I have shown and described my invention in a preferred form, many changes and modifications may be made without departing from the spirit of the invention defined in the following claims.

I claim:

1. The method of making interlockable elements for a slide fastener, which includes the step of preliminarily pressing and thereby deforming, without cutting, the entire length of a long continuous strip of uniform wire stock to form a connected series of embryo fastener elements therefrom, each of said embryo elements comprising a solid embryo head and widely divergent embryo jaws, the head being narrow and adapted to interlock with the heads of adjacent elements when the elements are mounted on the slide fastener, and the embryo jaws diverging outwardly from the embryo head, said connected elements being arranged longitudinally of the strip in end to end relation with the divergent embryo jaws pointing generally toward one end of the strip, there being substantially no waste material outside the embryo jaws of the elements.

2. The method of making interlockable elements for a slide fastener, which includes the step of preliminarily pressing and thereby deforming the entire length of a long continuous strip of uniform wire stock to form an integrally connected series of embryo fastener elements therefrom, each of said embryo elements comprising a solid embryo head and widely divergent embryo jaws, the head being narrow and adapted to interlock with the heads of adjacent elements when the elements are mounted on the slide

fastener, and the embryo jaws diverging outwardly from the embryo head, and said connected embryo elements being arranged longitudinally of the strip in end to end relation with the embryo jaws pointing toward one end of the strip, and at the same time pressing the connecting material between the embryo heads and jaws of the successive embryo elements down to a thin web of material adapted to be subsequently punched away for completion and separation of the elements.

3. The method of manufacturing a slide fastener wire, which includes preliminarily running a continuous uniform solid wire between a single pair of rotating pressure coining rolls, the surfaces of which are shaped negatively to portions of the desired fastener elements, and thereby forming in a single rolling coining operation a relatively broad flat wire having a continuous series of projections uniformly spaced on one side of the wire, and corresponding recesses uniformly spaced on the opposite side of the wire for the heads of the fastener elements, the wire being wider than the projections and recesses and the marginal portions thereof acting to provide material for the formation of spread jaws when the elements are severed from the wire, the coining impressions in the rolls being such that the slide fastener wire is adapted to be severed into a series of elements arranged longitudinally of the wire and all pointing in the same direction.

4. The method of manufacturing embryo slide fastener elements which includes preliminarily running a continuous uniform solid wire between a single pair of rotating pressure coining rolls the surfaces of which are shaped negatively to the desired embryo elements and thereby forming in a single rolling coining operation a continuous series of relatively broad flat connected embryo slide fastener elements, each of said elements having an embryo head with angularly spread embryo jaws connected thereto, and said embryo heads being uniformly spaced along the wire and each having a projection and a recess, the coining impressions in the rolls being such that the coined embryo elements are arranged longitudinally of the wire and all point in the same direction.

5. The method of manufacturing embryo slide fastener elements, which includes preliminarily running a continuous uniform round metallic wire between rotating pressure rolls the surfaces of which are shaped negatively to the desired embryo elements, and thereby forming a continuous series of relatively broad flat connected embryo slide fastener elements, each of said embryo elements having an embryo head with spread embryo jaws connected thereto, said embryo head having a projection and a recess, and said embryo elements being connected by a web of metal between the spread embryo jaws.

6. The method of manufacturing a slide fastener wire, which includes preliminarily running a continuous uniform wire between rotating pressure rolls, the surfaces of which are shaped negatively to portions of the desired fastener elements, and at intervals measuring the rolled wire and adjusting the spacing between the rolls to compensate for changes in the diameter and deformability of the wire being supplied to the rolls in order to maintain uniformity in the resulting slide fastener wire.

7. In the manufacture of slide fasteners, the method which includes pressing, without cut-

ting, a continuous wire stock in order to deform the same into a connected series of embryo fastener elements, each of said elements comprising an interlockable embryo head portion and divergent embryo jaw members, the embryo head of each member being connected to the divergent embryo jaws of the adjacent member, and reeling said stock, whereby the stock may be stored and thereafter unreeling as needed to fill particular orders for slide fasteners.

8. In the manufacture of slide fasteners, the method which includes pressing, without cutting, a continuous round wire stock in order to deform the same into a connected series of embryo fastener elements, each of said elements comprising an interlockable embryo head portion and spread embryo jaw members, the embryo head of each member being connected to the spread embryo jaws of the adjacent member with the elements arranged end to end, the embryo head and spread jaws of the element being wider than the diameter of the round wire stock, and reeling said stock with the embryo elements head first, whereby the formed stock may be stored and thereafter unreeling jaw first as needed to fill particular orders for slide fasteners.

9. The method of manufacturing embryo slide fastener elements which includes preliminarily running a continuous uniform wire between rotating pressure rolls the surfaces of which are shaped negatively to the desired embryo elements and thereby forming a continuous series of connected embryo slide fastener elements, each of said elements having an interlockable embryo head with angularly spread embryo jaws connected thereto, said elements being connected end to end with the embryo head of one element connected to the angularly spread embryo jaws of the next element, the rolls being rotated in proper direction to form the embryo elements pointing head first, and thereupon reeling the wire with the embryo elements pointing head first, for storage and subsequent utilization.

10. The method of manufacturing embryo slide fastener elements, which includes preliminarily running a continuous round metallic wire between rotating pressure rolls the surfaces of which are shaped negatively to the desired embryo elements and thereby forming a continuous series of connected embryo slide fastener elements, each of said elements having an interlockable embryo head with spread embryo jaws connected thereto, said elements being connected end to end with the embryo head of one element connected to the open embryo jaws of the next element, the rolls being rotated in proper direction to form the embryo elements pointing head first, the embryo head and open jaws being wider than the diameter of the round wire stock, permitting elongation of the wire as it is formed between the rolls by freeing the wire from the rolls promptly after forming the same, and thereupon reeling the wire with the embryo elements pointing head first for storage and subsequent utilization.

11. In the manufacture of slide fasteners, the method which includes pressing a continuous round wire stock in order to deform the same into a connected series of embryo fastener elements, each of said embryo elements comprising an interlockable embryo head portion and divergent embryo jaw members, the embryo head of each element being connected to the divergent embryo jaws of the adjacent ele-

ment by a thin web of metal, with the embryo elements arranged end to end, the embryo head and jaws of the embryo element being wider than the diameter of the round wire stock, reeling said stock, whereby the formed stock may be stored and thereafter unreeling as needed to fill orders for slide fasteners, and thereafter severing successive elements from the formed wire by punching away the thin web of metal to form the finished elements.

12. The method of manufacturing slide fasteners, which includes preliminarily running a continuous uniform wire between rotating pressure rolls, the surfaces of which are shaped negatively to portions of the desired fastener elements, reeling the wire with the embryo elements pointed head first, thereafter unreeling the wire so that the embryo elements point in opposite direction, feeding the same intermittently toward a tape, severing successive elements one after another from the strip while shaping element jaws and clamping element jaws of one element after another on the tape, and intermittently feeding the tape in a longitudinal direction.

13. In the manufacture of a stringer for a slide fastener, said stringer comprising a series of elements secured along one edge of a tape, the method which includes pressing and thereby deforming, without cutting, a continuous wire to form an integrally connected series of embryo fastener elements therefrom, each of said elements comprising an interlockable solid embryo head portion and angularly spread embryo jaws, the spread embryo jaws being wider than the original stock, said connected embryo elements being arranged longitudinally of the strip in end to end relation with the divergent embryo jaws pointing generally toward one end of the strip, intermittently feeding the continuous pressed wire with the elements pointing jaw first toward a tape, severing successive elements one after the other from the wire and clamping element jaws of one element after another on the tape, and intermittently feeding the tape.

14. The method of making a stringer for a slide fastener which includes pressing and thereby deforming, without cutting, a continuous strip of stock to form a connected series of embryo fastener elements, each of said elements comprising an interlockable embryo head portion and angularly spread embryo jaws, the embryo head of each member being connected to the spread embryo jaws of the adjacent member, reeling said stock with the embryo elements pointing head first, thereafter unreeling said stock with the embryo elements pointing jaw first, and feeding the same intermittently toward a tape, severing successive elements one after another from the strip and clamping element jaws of one element after another on the tape, and intermittently feeding the tape in a longitudinal direction.

15. The method of making a stringer for a slide fastener, which includes pressing and thereby deforming, without cutting, a continuous strip of stock to form a connected series of embryo fastener elements therefrom, each of said elements comprising an interlockable embryo head portion and spread embryo jaws, reeling said stock, thereafter unreeling said stock and feeding the same intermittently toward a tape, intermittently feeding the tape in a longitudinal direction, clamping the jaws of the first element on the tape and severing the first element from the next succeeding element, the severing and clamping operations being performed at about

the same time, thereupon advancing the tape and stock, and so on.

16. The method of making a stringer for a slide fastener, which includes pressing and thereby deforming, without cutting, a continuous strip of stock to form a connected series of embryo fastener elements therefrom, each of said elements comprising an interlockable embryo head portion and spread embryo jaws, the embryo head of each member being connected to the spread embryo jaws of the adjacent member, reeling said stock with the embryo elements pointing head first, thereafter unreeling said stock with the embryo elements pointing jaw first and feeding the same intermittently toward a tape, intermittently feeding the tape in a longitudinal direction, clamping the jaws of the first element on the tape and severing the material connecting the first element to the next succeeding element, the severing and clamping operations being performed at about the same time, thereupon advancing the tape and the stock, and so on.

17. The method of making a stringer for a slide fastener, which includes deforming, without cutting, continuous round wire stock to form a connected series of embryo fastener elements therefrom, each of said elements comprising an interlockable embryo head portion and spread embryo jaws, the embryo head of each element being connected to the embryo jaws of the adjacent element, reeling said deformed wire with the embryo elements pointing head first, thereafter unreeling said wire with the embryo elements pointing jaw first and feeding the same intermittently toward the beaded edge of a tape, intermittently feeding the tape in a longitudinal direction, clamping the jaws of the first element around the bead of the tape and severing the material connecting the first element to the next succeeding element, the severing and clamping operations being performed at about the same time, thereupon advancing the tape and feeding the wire to bring the next element in engagement therewith, and so on.

18. In the manufacture of a stringer for a slide fastener, said stringer comprising a series of elements secured along one edge of a tape, the method which includes pressing and thereby deforming, without cutting, a continuous strip of narrow stock to form an integrally connected series of embryo fastener elements therefrom each of said elements comprising an interlockable solid embryo head portion and widely spread embryo jaws, the spread embryo jaws being wider than the original stock, said connected embryo elements being arranged longitudinally of the strip in end to end relation with the divergent embryo jaws pointing generally toward one end of the strip, intermittently feeding the tape, intermittently feeding the continuous strip of pressed stock with the embryo elements pointing jaws first, clamping the jaws of the first element on the tape and thereafter severing the first element from the succeeding element, and thereupon again feeding the tape and strip preparatory to clamping the next element in place on the aforesaid tape.

19. In the manufacture of a stringer for a slide fastener, said stringer comprising a series of elements secured along one edge of a tape, the method which includes pressing and thereby deforming a continuous strip of narrow stock to form an integrally connected series of embryo fastener elements arranged end to end, each of

said embryo elements comprising an interlockable solid embryo head portion and widely spread embryo jaws, the connecting material between the embryo heads and spread jaws of the successive embryo elements being pressed down to a thin web of material adapted to be punched away for completion and separation of the elements, intermittently feeding a tape, intermittently feeding said strip toward the tape with the embryo elements jaws first, clamping the jaws of the first element on the tape and at about the same time punching away the thin web of material connecting the said first element to the succeeding elements, and thereupon again feeding the tape and strip preparatory to clamping the next element on the aforesaid tape.

20. The method of making a stringer for a slide fastener which includes pressing and thereby deforming, without cutting, a continuous round wire stock to form a connected series of embryo fastener elements therefrom, each of said embryo elements comprising an interlockable embryo head portion and spread embryo jaws, the embryo head of each embryo element being connected to the embryo jaws of the adjacent embryo element by a thin web of connecting material, reeling said deformed wire with the embryo elements pointing head first, thereafter unreeling said wire with the embryo elements pointing jaw first and feeding the same intermittently toward the beaded edge of a tape, intermittently feeding the tape in a longitudinal direction, clamping the jaws of the first element around the bead of the tape, thereafter punching away the web of material connecting the first element to the next succeeding element in order to sever and finish shaping the first element, and thereupon advancing the tape and feeding the punched wire to bring the jaws of the next element into engagement with the tape, and so on.

21. A step product in the manufacture of slide fasteners, said step product comprising a long wire made up of a continuous integrally connected series of embryo fastener elements, each of said embryo elements comprising a solid embryo head portion and widely divergent embryo jaws, and said connected embryo elements being arranged longitudinally of the strip in end to end relation with the embryo jaws pointing toward one end of the strip, the embryo head of each embryo element being connected to the spread embryo jaws of the adjacent embryo element by a thin web of material which fills the space within said spread of jaws and head, and which is adapted to be punched away for completion of the shaping of the outline of the elements and for separation of the elements, said web of material having a thickness only a small fraction of the thickness of the element.

22. A step product in the manufacture of slide fasteners, said step product comprising a reel of wire the entire length of which is pressed, without cutting, and thereby deformed into a connected series of embryo slide fastener elements, each of said elements comprising an interlockable embryo head portion and spread embryo jaws, the embryo head of each embryo element being connected to the spread embryo jaws of the adjacent embryo element with the embryo elements arranged end to end and longitudinally of the wire, said embryo elements all pointing in the same direction and being reeled in such direction that the embryo elements point jaw first when unreeled from the reel.

23. A step product in the manufacture of slide

fasteners, said step product comprising a reel of wire the entire length of which is pressed to form a connected series of embryo slide fastener elements, each of said embryo elements comprising an interlockable embryo head portion and divergent embryo jaws, the embryo head of each embryo element being connected to the divergent embryo jaws of the adjacent embryo element by means of a thin web of metal which fills the space within said spread jaws and head, and which is adapted to be punched away, the embryo elements being arranged end to end and longitudinally of the wire, said embryo elements all pointing in the same direction and being reeled in such direction that the embryo elements point jaws first when unreeled from the reel.

24. Apparatus for the manufacture of slide fasteners, said apparatus comprising a reel to supply a continuous wire, means to press and thereby deform, solely by pressing and without cutting, the wire into a connected series of embryo fastener elements, each of said elements comprising an interlockable embryo head portion and spread embryo jaws, and a reel on which the formed wire is wound as fast as it is formed, for storage until needed.

25. Apparatus for the manufacture of slide fasteners, said apparatus comprising means to supply a continuous round wire, means to squeeze and thereby deform the round wire into a connected series of embryo fastener elements, each of said elements comprising an interlockable embryo head portion and spread embryo jaws, the embryo head of each embryo element being connected to the spread embryo jaws of the adjacent embryo element with the embryo elements arranged end to end longitudinally of the wire, and a reel on which the formed wire is wound as fast as it is formed, for storage until needed, the wire deforming means being so shaped as to form the embryo elements with the embryo heads pointing toward the reel on which the formed wire is being wound.

26. Apparatus for manufacturing a slide fastener wire or connected series of embryo slide fastener elements, each of said elements having an embryo head with spread embryo jaws connected thereto, said embryo head having a projection and a recess, and said embryo elements being connected between the spread embryo jaws, said apparatus comprising pressure rolls, one having a periphery formed negatively to one side of the slide fastener wire, and the other having a periphery formed negatively to the other side of the slide fastener wire, and means to support and synchronously rotate the rolls in mating registration.

27. Apparatus for transforming a smooth wire into an element wire or a connected series of embryo slide fastener elements, each of said embryo elements having a projection and a recess, said apparatus comprising two small diameter pressure rolls having peripheries formed generally negatively to the desired element wire, the roll impressions being such as to intermittently compress the wire at the middle to spread the wire at regularly spaced points along the wire and to thereby force the metal outwardly to form angularly projecting embryo jaw ends.

28. Apparatus for manufacturing a slide fastener wire or connected series of embryo slide fastener elements, each of said embryo elements having an embryo head with spread embryo jaws connected thereto, said embryo head having a projection and a recess, and said embryo elements

being connected between the spread embryo jaws, said apparatus comprising two small-diameter pressure rolls, one having a periphery formed negatively to one side of the slide fastener wire, and the other having a periphery formed negatively to the other side of the slide fastener wire, said rolls having a diameter of less than two inches and preferably having a diameter of only one inch or less.

29. Apparatus for manufacturing a slide fastener wire or connected series of embryo slide fastener elements, each of said embryo elements having an embryo head with spread embryo jaws connected thereto, said embryo head having a projection and a recess, and said embryo elements being connected between the spread embryo jaws, said apparatus comprising two small-diameter pressure rolls, one having a periphery formed negatively to one side of the slide fastener wire, and the other having a periphery formed negatively to the other side of the slide fastener wire, said rolls having a diameter of less than two inches and preferably having a diameter of only one inch or less, said rolls being synchronously rotated under high pressure and high torque by means including shafts, support bearings, and driving gears, all of which are substantially larger in diameter than the diameter of the pressure rolls, and sufficiently massive to provide such pressure between the rolls as to deform a uniform wire into the desired slide fastener wire in a single passage through the rolls.

30. Apparatus for the manufacture of slide fastener wire or a connected series of embryo slide fastener elements, each of said embryo elements having an embryo head with spread embryo jaws connected thereto, said embryo head having a projection and a recess, and said embryo elements being connected between the spread embryo jaws, said apparatus comprising small-diameter pressure rolls supported on sturdy large-diameter shafts, the shafts being in parallel relation and larger in diameter than the pressure rolls, and sufficiently massive to provide such pressure between the rolls as to deform a uniform wire into the desired slide fastener wire in a single passage through the rolls.

31. Apparatus for the manufacture of slide fastener wire or a connected series of embryo slide fastener elements, each of said embryo elements having an embryo head with spread embryo jaws connected thereto, said embryo head having a projection and a recess, and said embryo elements being connected between the spread embryo jaws, said apparatus comprising small-diameter pressure rolls supported on sturdy large-diameter shafts, the pressure rolls being mounted at adjacent ends of the shafts, and the shafts being parallel to one another and extending in opposite directions away from the pressure rolls, said rolls having a small diameter of the order of one inch and said shafts being sufficiently massive to provide such pressure between the rolls as to deform a uniform wire into the desired slide fastener wire in a single passage through the rolls.

32. Apparatus for the rolling of slide fastener wire, or a connected series of embryo slide fastener elements each having a projection and a recess, said apparatus comprising a frame, relatively large massive bearings mounted on said frame in approximately end to end relation but one being offset relative to the other, massive roll-support shafts in said bearings, said shafts extending in opposite directions and terminating

between the bearings, pressure rolls mounted in the ends of said large diameter shafts and arranged to be rolled in synchronism with one another by the shafts, one of said rolls having a periphery formed negatively to one side of the slide fastener wire, and the other having a periphery formed negatively to the other side of the slide fastener wire, a countershaft extending through said frame offset from the bearings, gearing of generous proportions gearing said countershaft to said roll shafts, and means for driving the countershaft, said shafts and gearing being sufficiently massive to provide such pressure between the rolls as to deform a uniform wire into the desired slide fastener wire in a single passage through the rolls.

33. Apparatus for the rolling of slide fastener wire or a connected series of embryo slide fastener elements, each of said embryo elements having an embryo head with spread embryo jaws connected thereto, said embryo head having a projection and a recess, and said embryo elements being connected between the spread embryo jaws, said apparatus comprising a frame, relatively large massive bearings mounted on said frame in end to end relation, one being elevated slightly relative to the other, massive roll-support shafts in said bearings, said shafts extending in opposite directions and terminating between the bearings, small-diameter pressure rolls mounted in the ends of said large-diameter shafts and arranged to be rolled in synchronism with one another by the shafts, one of said rolls having a periphery formed negatively to one side of the slide fastener wire, and the other having a periphery formed negatively to the other side of the slide fastener wire, a countershaft extending through said frame beneath the bearings, gearing of generous proportions gearing said countershaft to said roll shafts, and means for driving the countershaft, said shafts and gearing being sufficiently massive to provide such pressure between the rolls as to deform a uniform wire into the desired slide fastener wire in a single passage through the rolls.

34. Apparatus for manufacturing a slide fastener wire, or a connected series of embryo fastener elements, said apparatus comprising pressure rolls, one having a periphery formed negatively to one side of the slide fastener wire, and the other having a periphery formed negatively to the other side of the slide fastener wire, means to support and synchronously rotate the rolls in mating registration, and a conveniently manipulatable self-locking precision adjustment means affording a very fine adjustment of the spacing between the rolls.

35. Apparatus for manufacturing a slide fastener wire, or a connected series of embryo slide fastener elements, said apparatus comprising pressure rolls, one having a periphery formed negatively to one side of the slide fastener wire, and the other having a periphery formed negatively to the other side of the slide fastener wire, means to support and synchronously rotate the rolls in mating registration, conveniently manipulatable precision screw adjustment means affording adjustment of the spacing between the rolls, and a scale for indicating the movement of the adjusting screw.

36. Apparatus for manufacturing a slide fastener wire, or a connected series of embryo slide fastener elements, said apparatus comprising pressure rolls, one having a periphery formed negatively to one side of the slide fastener wire, the other having a periphery formed negatively

to the other side of the slide fastener wire, means to support and synchronously rotate the rolls in mating registration, means affording axial movement of one of said rolls, a precision adjustment means for moving said roll in order to bring the rolls into axial registration, means affording transverse movement of one of the rolls in order to vary the spacing between the rolls, and a precision adjustment means for moving said roll to vary the spacing between the rolls.

37. Apparatus for the manufacture of a slide fastener wire, said apparatus comprising small-diameter pressure rolls supported at the adjacent ends of sturdy large-diameter shafts, one of said rolls having a periphery formed negatively to one side of the slide fastener wire, and the other having a periphery formed negatively to the other side of the slide fastener wire, the shafts extending in opposite directions away from the pressure rolls and being carried in large massive bearings mounted on a base, a countershaft extending beneath the bearings, gearing of generous proportions outside said bearings for gearing said countershaft to said roll shafts, and precision screw adjustment means affording adjustment of the spacing between the rolls during operation of the apparatus.

38. A rolling mill for the manufacture of a slide fastener wire, or a connected series of embryo slide fastener elements, said mill comprising pressure rolls supported at the adjacent ends of sturdy large-diameter shafts, one of said rolls having a periphery formed negatively to one side of the slide fastener wire, and the other having a periphery formed negatively to the other side of the slide fastener wire, the shafts extending in opposite directions away from the pressure rolls and being carried in large massive bearings mounted on a base, a countershaft extending collaterally of the bearings, gearing of generous proportions outside said bearings for gearing said countershaft to said roll shafts, means affording transverse movement of one of said bearings to vary the spacing between the rolls, readily manipulatable precision adjustment means for moving said bearing in order to adjust the spacing between the rolls, and a scale for indicating the movement of the adjustment means.

39. Apparatus for the manufacture of a slide fastener wire, said apparatus comprising small-diameter pressure rolls supported at the adjacent ends of sturdy large-diameter shafts, one of said rolls having a periphery formed negatively to one side of the slide fastener wire, and the other having a periphery formed negatively to the other side of the slide fastener wire, the shafts extending in opposite directions away from the pressure rolls and being carried in large massive bearings mounted on a base, a countershaft extending beneath the bearings, gearing of generous proportions outside said bearings for gearing said countershaft to said roll shafts, and means affording vertical adjustment of the lower pressure roll in order to vary the spacing between the rolls, said means including horizontal trunnions for the bearing, precision screw adjustment means for supporting said bearing in desired position, and a scale for indicating the movement of the adjusting screw.

40. Apparatus for manufacturing a slide fastener wire, or a connected series of embryo slide fastener elements, said apparatus comprising pressure rolls, one having a periphery formed negatively to one side of the slide fastener wire,

the other having a periphery formed negatively to the other side of the slide fastener wire, said rolls having tapered shanks, and means to support and synchronously rotate the rolls in mating registration, said means including sturdy, large-diameter shafts bored to receive the tapered shanks of the rolls, the shafts extending in opposite directions away from the pressure rolls and being carried in large, massive bearings mounted on a base, a countershaft extending collaterally of the bearings, gearing of generous proportions outside said bearings for gearing said countershaft to said roll shafts, means affording axial movement of one of said bearings, and a precision adjustment means for moving said bearing in order to bring the rolls into axial registration.

41. Apparatus for transforming a round wire into an element wire, or connected series of embryo slide fastener elements, each of said embryo elements having an embryo head with spread embryo jaws connected thereto, said embryo head having a projection and a recess and said embryo elements being disposed longitudinally of the wire and connected by a web of metal between the spread embryo jaws, said apparatus comprising two small-diameter pressure rolls having peripheries formed generally negatively to the desired element wire, the roll impressions at the head of the embryo element being such as to confine and shape the external configuration of the head, and the roll impressions at the embryo jaws of the element being such as to compress the wire at the middle to form the desired web and to squeeze the metal outwardly to form the embryo jaws, the roll impression around the embryo jaws being substantially enlarged in order to accommodate variations in the round wire stock.

42. Apparatus for transforming a round wire into an element wire, or connected series of embryo slide fastener elements, each of said embryo elements having an embryo head with spread embryo jaws connected thereto, said embryo head having a projection and a recess and said embryo elements being disposed longitudinally of the wire and connected by a web of metal between the spread embryo jaws, said apparatus comprising two small-diameter pressure rolls having peripheries formed generally negatively to the desired element wire, the roll impressions at the embryo head of the embryo element being such as to confine and shape the external configuration of the embryo head, and the roll impressions at the embryo jaws of the embryo element being such as to compress the wire at the middle to form the desired web and to squeeze the metal outwardly to form the embryo jaws, the roll impression around the embryo jaws being substantially enlarged in order to accommodate variations in the round wire stock without causing changes in the pitch of the element wire, the maximum breadth of said element wire being defined, however, by side walls of the roll impression in order to keep the width of the element wire at the points of maximum breadth within a desired limit.

43. Apparatus for the manufacture of slide fasteners, out of a reel of preliminarily pressed wire, said wire being so pressed and thereby deformed as to form a connected series of embryo fastener elements, each of said embryo elements comprising an interlockable embryo head portion and divergent embryo jaws, said apparatus comprising a support for rotatably supporting said

reel, means to intermittently feed the wire in a longitudinal direction, and means to successively sever the elements from the wire, said means including a die and a punch so shaped as to cut around the end of the head of the endmost element being severed, and at the same time to cut around the inside of the spread jaws of the next element in order to shape the entire inside surface of the jaws, in a single stroke of the punch

44. Apparatus for the manufacture of slide fasteners, said apparatus comprising means to feed an element wire in longitudinal direction toward a tape extending transversely of the element wire, means to feed the tape longitudinally, a punch arranged for reciprocation in the direction of the tape at a point near the tape and transversely of the plane of the jaws of the element wire, said punch being so shaped as to shape the outline of the end of the head of the endmost element being severed from the element wire, and at the same time to cut around the inside of the spread jaws of the next element in order to properly shape the entire inside surface of the jaws, in a single stroke of the punch, and oppositely movable clamping jaws for clamping the jaws of an element on the beaded edge of the tape.

45. Apparatus for the manufacture of slide fasteners, out of a reel of preliminarily pressed wire, said wire being so pressed and thereby deformed as to form a connected series of embryo fastener elements, each of said embryo elements comprising an interlockable embryo head portion and spread embryo jaws, the embryo head of each embryo element being connected to the spread embryo jaws of the adjacent embryo element with the embryo elements arranged end to end and the embryo jaws pointing in the direction of the wire leaving the reel, said apparatus comprising a support on which said reel is rotatably mounted, means to intermittently feed the wire in a longitudinal direction, means to sever the endmost element from the wire, said means including a die and a punch so shaped as to cut around the end of the head of the endmost element being severed, and at the same time to cut around the inside of the spread jaws of the next element in order to shape the entire inside surface of the jaws, in a single stroke of the punch, means to intermittently feed a tape in a longitudinal direction, and means to clamp the jaws of the endmost element to the tape as it is severed from the wire.

46. Apparatus for the manufacture of slide fasteners, out of a reel of preliminarily pressed wire, said wire being so pressed and thereby deformed as to form a connected series of embryo fastener elements, each of said embryo elements comprising an interlockable embryo head portion and divergent embryo jaws, the embryo head of each embryo element being connected by means of a thin web of metal to the divergent embryo jaws of the adjacent embryo element with the embryo elements arranged end to end and the embryo jaws pointing in the direction of the wire leaving the reel, said apparatus comprising a support for rotatably supporting said reel, means to intermittently feed the wire in a longitudinal direction, means to punch away the thin web of metal in order to sever the endmost element from the wire, said means including a die and a punch so shaped as to cut around the end of the head of the endmost element being severed, and at the same time to cut around the inside of the spread jaws of the next element in order to shape the entire inside surface of the jaws, in a single stroke

of the punch, means to intermittently feed a tape in a longitudinal direction, and means to clamp the jaws of the endmost element to the tape as it is severed from the wire.

47. Apparatus for the manufacture of slide fasteners, said apparatus comprising means to feed an element wire in longitudinal direction toward a tape extending transversely of the element wire, means to feed the tape longitudinally, a punch arranged for reciprocation in the direction of the tape at a point immediately adjacent the tape and transversely of the plane of the jaws of the element wire, oppositely movable clamping jaws for clamping the jaws of an element on the beaded edge of the tape, a counter, and a single cam shaft provided with appropriate cams for operating the wire feed means, the tape feed means, the punch, the clamping jaws, and the counter.

48. Apparatus for the manufacture of slide fasteners, said apparatus comprising means to feed an element wire in longitudinal direction toward a tape extending transversely of the element wire, means to feed the tape longitudinally, a punch arranged for reciprocation in the direction of the tape at a point close to the tape and transversely of the plane of the jaws of the element wire, oppositely movable clamping jaws for clamping the jaws of an element on the beaded edge of the tape, and a single cam shaft provided with appropriate cams for operating the wire feed means, the tape feed means, the punch, and the clamping jaws, all of the aforesaid reciprocating parts being small and light and short in stroke, whereby the apparatus may be operated at exceedingly high speeds.

49. Apparatus for the manufacture of slide fasteners from an element wire comprising a connected series of embryo fastener elements, a feed dog to intermittently feed the element wire in a longitudinal direction, a check dog for preventing return movement of the wire, means to intermittently feed a tape in a longitudinal direction, means to sever the elements from the wire and to attach them to the tape, means for driving the feed dog, the tape feed means and the severing and attaching means, a counter, and means responsive to said counter for operating on one of said dogs and thereby making said combination of dogs unable to cause feed of the element wire, so as to produce a blank space between stringers.

50. Apparatus for the manufacture of slide fasteners, said apparatus comprising a reciprocable feed dog to intermittently feed an element wire in a longitudinal direction, a check dog for preventing return movement of the wire, means to intermittently feed a tape in a longitudinal direction, means to sever the elements from the wire and to attach them to the tape, means for driving the feed dog, the tape feed means and the severing and attaching means, a counter, and means responsive to said counter for moving the check dog out of engagement with the wire in order to interrupt the feed of the wire so as to produce a blank space between stringers, without necessitating interruption of the reciprocation of the feed dog.

51. Apparatus for the manufacture of slide fasteners, said apparatus comprising means to feed an element wire in longitudinal direction toward a tape extending transversely of the element wire, means to feed the tape longitudinally, a punch

arranged for reciprocation in the direction of the tape at a point close to the tape and transversely of the plane of the jaws of the element wire, oppositely movable clamping jaws for clamping the jaws of an element on the beaded edge of a tape, the means to feed the element wire comprising a feed dog the working end of which engages the wire at a point just ahead of and very close to the aforesaid punch.

52. Apparatus for the manufacture of slide fasteners, out of a heavy reel of slide fastener wire, or a connected series of embryo fastener elements, said apparatus comprising a support for rotatably supporting said reel, means to intermittently feed the wire in a longitudinal direction, means to sever the elements from the wire and to attach them to a tape, and means to maintain a loop of slack wire between the reel and the feed means, said means including a feeler to determine upper and lower limits for the loop of slack wire, an electric motor for rotating said reel in such direction as to unwind the wire, and switch means controlled by said feeler means for starting said motor when the slack reaches its upper position or minimum limit and for stopping said motor when the slack reaches its lower position or maximum limit.

53. Apparatus for manufacturing a slide fastener wire or connected series of embryo slide fastener elements, each of said elements having an embryo head with spread embryo jaws connected thereto, said embryo head having a projection and a recess and said embryo elements being connected between the spread embryo jaws, said apparatus comprising pressure rolls, one of said rolls having a periphery formed negatively to one side of the slide fastener wire, and the other having a periphery formed negatively to the other side of the slide fastener wire, and means to support and synchronously rotate the rolls in mating registration, said means including sturdy large diameter shafts, the shafts being parallel to one another and extending in opposite directions away from the pressure rolls, each of said rolls being formed integrally with a relatively long tapered shank having a threaded part at the small end thereof, the shafts having tapered holes dimensioned to matingly receive the tapered shanks of the rolls, and screw means for drawing the tapered shanks of the rolls axially into the shafts in order to secure the same rigidly in place.

54. Apparatus for manufacturing a slide fastener wire or connected series of embryo slide fastener elements, each of said elements having an embryo head with spread embryo jaws connected thereto, said embryo head having a projection and a recess, and said embryo elements being connected between the spread embryo jaws, said apparatus comprising pressure rolls, one having a periphery formed negatively to one side of the slide fastener wire, and the other having a periphery formed negatively to the other side of the slide fastener wire, means to support and synchronously rotate the rolls in mating registration, and a wire guide in the form of a finger having a wire guide passage extending longitudinally thereof, said finger being mounted in a position transverse of the plane of the shafts and extending toward the rolls to a point immediately adjacent the point of contact of the rolls with the wire.

GEORGE WINTRITZ.

CERTIFICATE OF CORRECTION.

Patent No. 2,201,068.

May 14, 1940.

GEORGE WINTRITZ.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 1, second column, line 8, for the word "or" read --of--; page 3, second column, line 63, for "serving" read --severing--; page 6, second column, line 66, for "bearing" read --bearings--; page 10, first column, line 22, before "precision" insert --micrometric--; page 11, first column, line 62, claim 10, for "rools" read --rolls--; page 12, second column, line 54, claim 21, strike out "of" before "jaws"; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 23rd day of July, A. D. 1940.

(Seal)

Henry Van Arsdale,
Acting Commissioner of Patents.



DEFENDANT'S EXHIBIT "M"

G. Sundback Patent No. 1,467,015

Filed July 10, 1919

Patented Sept. 4, 1923

[Note: Defendant's Exhibit "M"—G. Sundback Patent No. 1,467,015 is the same as Plaintiff's Exhibit No. 13 set out at page 1689 of this printed record.]



DEFENDANT'S EXHIBIT "N"

J. A. Murphy Patent No. 1,664,480

Filed July 27, 1923

Patented April 3, 1928



April 3, 1928.

1,664,480

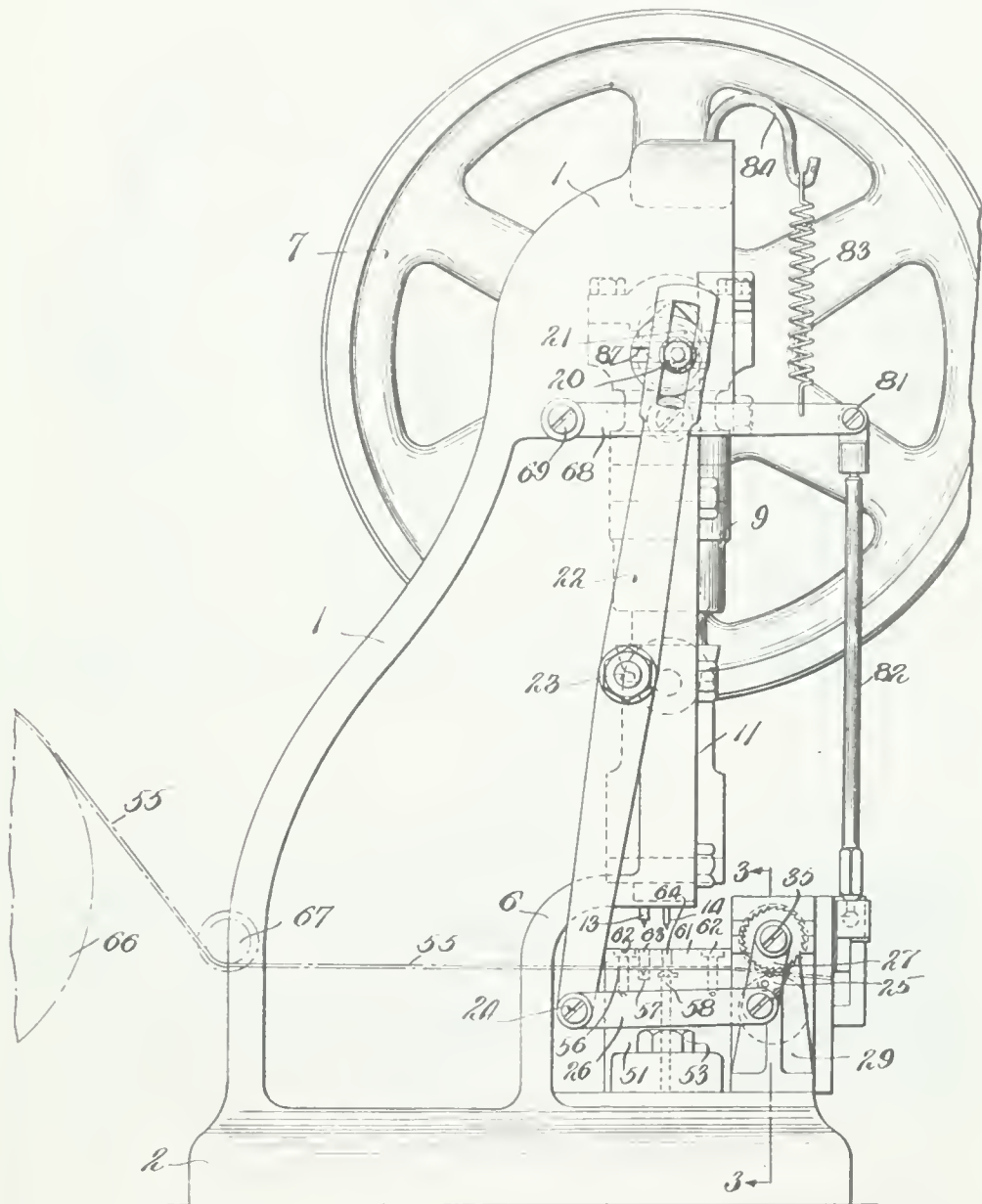
J. A. MURPHY

MANUFACTURE OF PRIMER ANVILS

Filed July 27, 1923

3 Sheets-Sheet 1

Fig. 1



Inventor
James A. Murphy,
by Roberts, Roberts & Cushman
Attorneys



April 3, 1928.

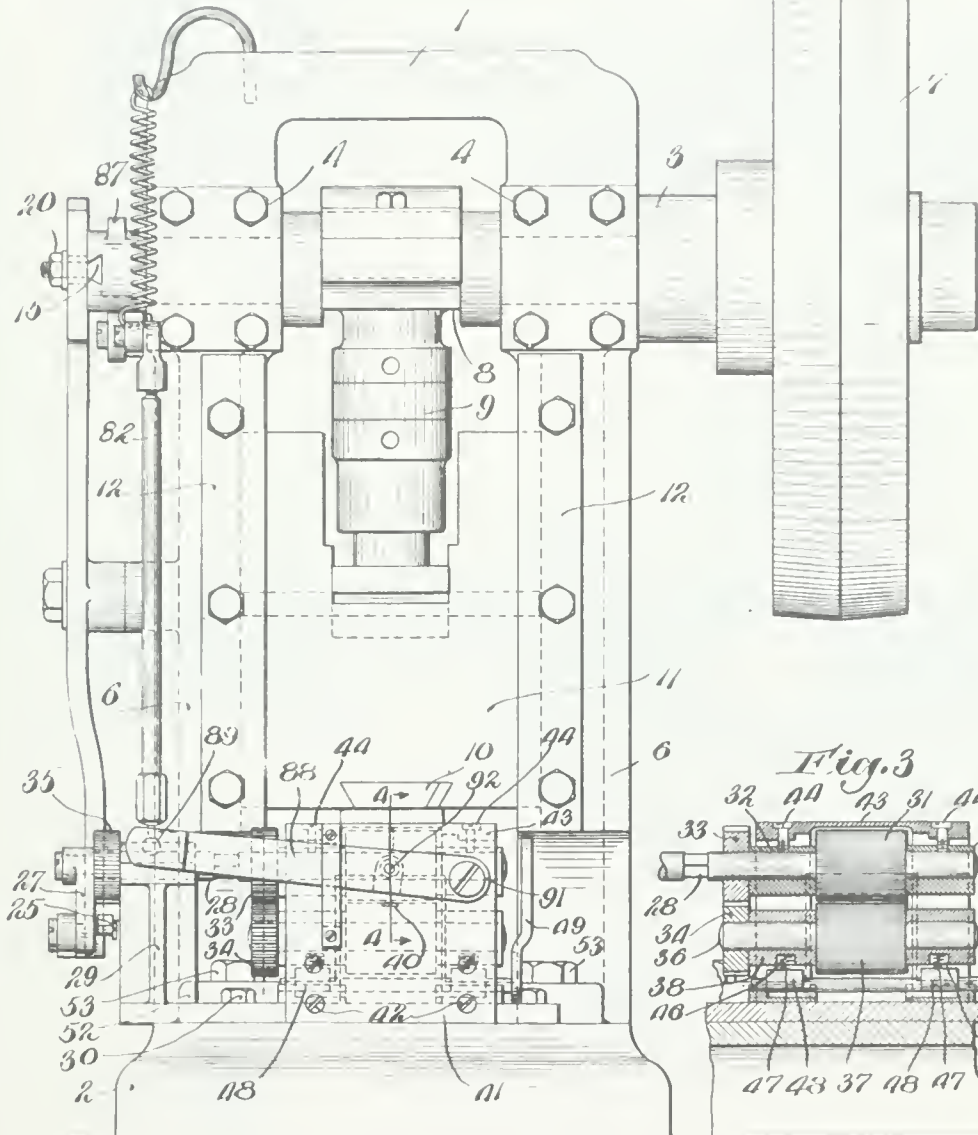
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J. A. MURPHY
MANUFACTURE OF PRIMER ANVILS

Filed July 27, 1923

3 Sheets-Sheet 2

Fig. 2



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April 3, 1928.

1,664,480

J. A. MURPHY

MANUFACTURE OF PRIMER ANVILS

Filed July 27, 1923

3 Sheets-Sheet 3

Fig. 4

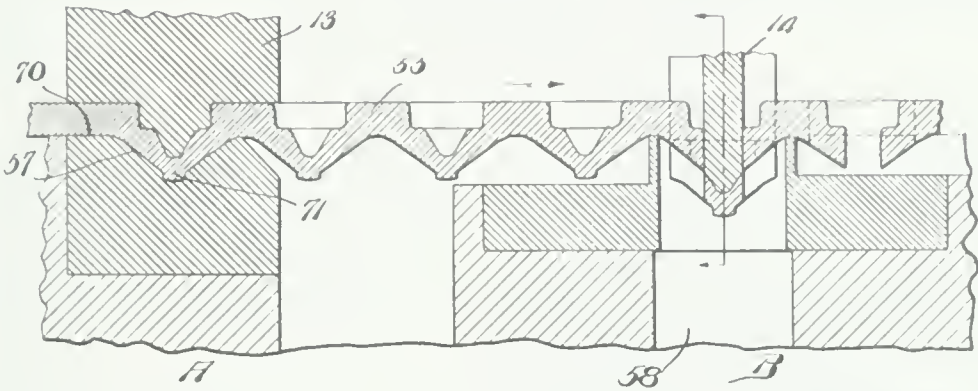


Fig. 5

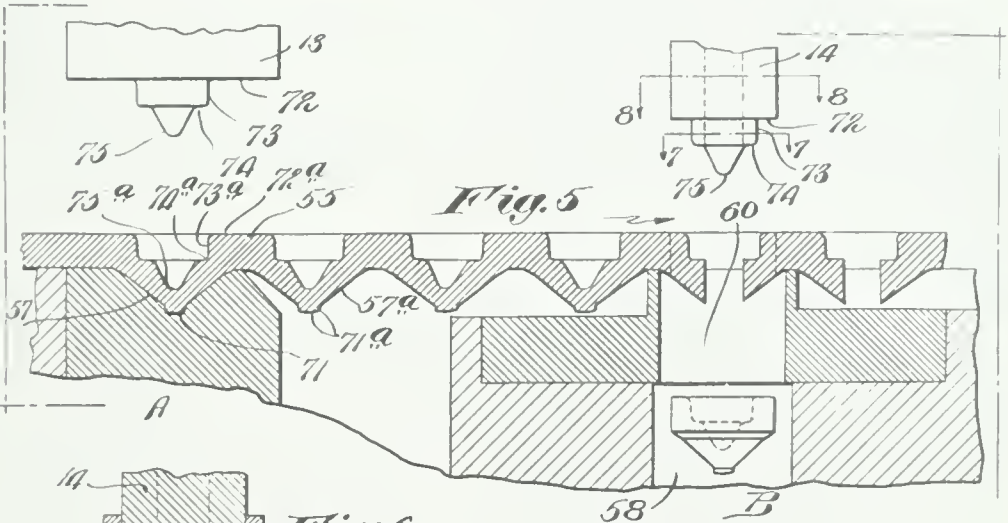


Fig. 6

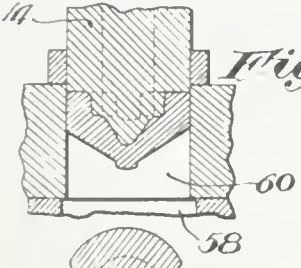
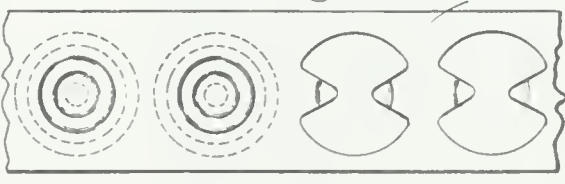


Fig. 9



Inventor
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UNITED STATES PATENT OFFICE.

JAMES A. MURPHY, OF LOWELL, MASSACHUSETTS, ASSIGNOR TO UNITED STATES CARTRIDGE CO., OF LOWELL, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

MANUFACTURE OF PRIMER ANVILS.

Application filed July 27, 1923. Serial No. 654,171.

In the manufacture of primer anvils, and more especially anvils having the shape and properties, such as described in my copending application, Sr. No. 654,170, filed on even date herewith, it is desirable that the operations involved shall be effected automatically, and it is accordingly an object of my invention to provide a machine for this purpose.

It is a feature of my invention that with my machine each individual anvil is made by a two stage operation upon a thin strip or sheet of malleable metal.

A preferred embodiment of my invention is described below, reference being made to the accompanying drawings, in which:

Fig. 1 represents a side elevation of the machine;

Fig. 2 represents a front elevation of the machine; and

Fig. 3 represents a detail cross-section on the plane indicated by the line 3—3 of Fig. 1.

Fig. 4 is a cross-section of a metal strip, and separate punching blocks in the plane of line 4—4, Fig. 2, showing the punches in lowered position;

Fig. 5 is a cross-section, the same as Fig. 4, the punches being in elevated position;

Fig. 6 is a detail cross-section of the extruding punch in direction of the arrows 6—6 in Fig. 4;

Fig. 7 is a cross-section of the extruding punch in the direction of arrows 7—7 of Fig. 5;

Fig. 8 is a cross-section of the extruding punch in the direction of the arrows 8—8 of Fig. 5; and

Fig. 9 is a plan view of a portion of the metal strip 55 shown in Fig. 5.

The yoke 1 is mounted upon the base 2 and supports the shaft 3 in the bearings 4. Said bearings are supported by the uprights 6 also mounted on the base 2. On the outer end of shaft 3 is the driving pulley 7 while between the bearings 4 is the eccentric bearing 8 to which one end of piston 9 is pivoted, the other end being pivoted to the vertically slidable head 11 mounted in the guides 12 on the uprights 6. Said head 11 is provided on its under face with a dovetail groove 10 in which may be mounted the embossing punch 13 and punch 14.

In a slot 15 on the end of shaft 3 opposite to the driving wheel is mounted the adjustable offset bolt 20 slidably engaging a slot 21 in a lever 22 which is pivoted to the upright 6 at 23 and at 24 to one end of arm 26, the other end of which is pivoted to an arm 27. Said arm 27 carries a pawl 25 and is pivoted to the end of a shaft 28, carrying a ratchet wheel 35 and bearing in the upright 29 fastened by nut 30 on base 2.

Said shaft 28, on the opposite side of upright 29, is provided with a corrugated roller 31 between bearings 32 mounted on either side of said roller, and with a gear 33. Said gear 33 meshes with a similar gear 34 on the shaft 36 of a similar roller 37, adjacent to said roller 31, and mounted on bearings 38.

The bearings 32 and 38 and their respective rollers 31 and 37 are resiliently urged toward each other by virtue of the arrangement to be described. Vertical plates 41 are fixed to the base 2 by means of screws 42 and joined together at the top by a horizontal plate 43. Passing through plate 43 are set screws 44 which press downward upon the bearings 32 while compression springs 46 set into recesses 47 in the under side of bearings 38, and operated by cams 48 and hand lever 49, tend to force bearing 38 upward. Thus the rollers 31 and 37 are yieldingly urged toward each other by a force depending upon the springs 46 and the positioning of the cams 48 thereagainst.

Said rollers are mounted forward of the block 51 which rests on base 2 clamped thereto by the boss 52, and bolts 53. Said block is provided with a horizontal slot 56 in the plane of contact of rollers 31 and 37, and adapted to receive a strip of metal 55 and to pass it between said rollers and to guide it beneath punch 13 and punch 14 in the head 11. In the bottom surface of said slot 56 is the depression 57 adapted to cooperate with the punch 13 in shaping said strip, and an aperture 58 adapted to register with and receive the punch 14 and to permit the piece of metal cut out by it to drop therethrough.

This part of the construction is more clearly illustrated by Figs. 4 and 5 in which the die block is represented in two units A and B, the metal strip 55 being adapted to move

intermittently in the direction of the arrow. Thus, a given portion of the strip will first come to rest over block A which has a flat top 70 with an inverted cone shaped depression 57 (the apex of which is enlarged into a cylindrical depression 71) in registry with embossing punch 13, and coacting therewith to shape said metallic strip as shown by Fig. 4. It is to be noted that said punch 13 has a flat surface 72, parallel with the flat top 70 of block A, a cylindrical surface 73, a flat surface 74, and an ovoido-conical point 75 opposite to the cylindrical depression 71 in depression 57, and shaping the corresponding surfaces 72^a, 73^a, 74^a, 75^a, 71^a, and 57^a respectively, on the metal strip 55. Adjacent block A, and at a given distance therefrom in the direction of the arrow is block B (block A and block B being represented by a single block 51 in Fig. 1) with a vertical aperture 58 therethrough, having the same cross section as the anvils to be made, and in registry with the extruding punch 14. The face of said punch 14 has surfaces identical in contour with those of punch 13 and which are numbered the same, but of a cross section as shown in Figs. 8 and 9, to correspond with the plan view of the anvils to be cut out. Likewise the entrance 60 to aperture 58 is of such a size and so shaped that said punch 14 will just fit it, producing a shearing action therewith to cut the strip 55 between them.

The block 51 may, as shown in Figs. 1 and 2, or may not as in Figs. 4 and 5, be covered by a cap plate 61, affixed to the die block by machine screws 62 and provided with openings 63 and 64 for the passage therethrough of the punch 13 and punch 14 respectively.

In operation, the strip of metal 55 is drawn from roller 66 passed under the guide roller 67, through slot 56 in the die block and thence between rollers 31 and 37 by which it is gripped under tension of the springs 46, and intermittently drawn forward a definite distance by each operation of the pawl 25 on the ratchet wheel 35.

After thus feeding in the end of the metal strip, power is applied, as by a belt to the pulley 7, and, upon consequent rotation of the shaft 3, the head 11 is lowered, forcing embossing punch 13 against the portion of the metal strip 55 immediately beneath it (imparting its contour to the upper surface and the contour of the depression 57 to its lower surface) and then lifting it clear of the strip entirely. Concurrently, the punch 14 is forced against a portion of the strip previously shaped by the punch 13 and by its shearing action against the edges of the aperture 60, cuts vertically through the strip, removing a corresponding section of the embossed portion therefrom.

It will be apparent that the metal strip

when so acted upon by punch 14 will not only be bent but molded into the desired shape and contour between the surfaces 72, 73, 74, 75, 57 and 71 providing it with the corresponding surfaces 72^a, 73^a, 74^a and 75^a on the upper side and 57^a and 71^a on the lower side. Not only so, but these surfaces will meet in sharply defined edges, which is exceedingly important,—especially between 72^a and 73^a and between 71^a and 57^a for example. Moreover, as a result of the difference in conical angle between the ovoido-conical point 75 and the conical depression 57, the thickness of the strip will be modified and decreased toward the top providing the space enclosed by surface 75^a.

By suitable adjustment of the offset bolt 20, it will, upon rotation of the shaft 3, operate the levers 22, 26 and 27, and pawl 25, and thereby push the ratchet wheel 35 forward, driving the corrugated roller 31 a given amount and this, in turn, draws the strip 55 forward the same distance. This distance is such that the portion of the strip 55 embossed by the die 13 will be brought into registry with the punch 14 and aperture 58 by an integral number of operations substantially equal to the ratio of the distance between the two to the length of the embossed portion of the strip.

Moreover, this advancement of the metal strip is performed alternately with the strokes of the punch 13 and punch 14, and after it has become disengaged from them. This is determined by the relative angular position of the offset bolt 20 and of the eccentric bearing 8 upon shaft 3.

Thus after die 13 has embossed one portion of the strip, it is raised, the strip advanced and the portion embossed by 13 subsequently registers with the punch 14 and upon the descent of the die-head 11 punch 14 completes the operation by cutting out the embossed portion. As above pointed out, this registry may take place upon the next or after any integral number of progressions of the metal strip, depending upon the distance between die 13 and punch 14 and the amount by which it is advanced.

In this operation, the shape of the punch 14 is preferably such that it will exactly coincide with the surfaces 72^a, 73^a, 74^a, 75^a which have been formed upon the corresponding portion of the strip 55. This not only serves to bring the strip more accurately concentric with the punch, but assures a perpendicular cutting action by the punch as it forces this portion of the metal into the entrance to the aperture 58.

The cut out portion of the strip falls through the aperture 58 and the remainder of the strip continues between rollers 31 and 37 which continue to draw it through the die as already described. In view of the fact that primer anvils are of relatively

small dimensions, it is not necessary to lift the molded strip in order to permit its continued passage through the machine. The strip is sufficiently flexible to lift under the tension employed in drawing it through the guide slot and the tapered depression in its under surface of itself tends to raise it from its position in the die after the molding operation.

As a safety device to further insure the registry of the embossed portion of the strip with punch 14, there may be provided the lever arm 68 pivoted at 69 to the yoke 1 and at 81 to the vertical rod 82 and drawn upwardly by spring 83 suspended by hook 84 from yoke 1. Said lever arm is operated by contact with the cam 87 mounted upon shaft 3, forcing it downwardly against the tension of spring 83. At its lower end rod 82 is pivoted at 89 to arm 88, said arm 88 is also pivoted to plate 41 at its opposite end 91 and carries a knife edge 92 adapted to bear against plate 41 and when in lowered position to close the aperture 40 therein, cutting off the protruding end of the strip 55.

By this device it will be apparent that with proper adjustment of the cam 87, the tongue 92 will be lowered over the opening 40 at that period in the rotation of shaft 3 when the punch 13 and punch 14 are in registry with the proper portions of the strip 55 and are in the act of impressing and punching it. It will also prevent any forward movement of the strip which may be induced by the shaping operation or by excessive action of the rollers 31 and 37 in drawing the strip through the die. This device is, however, supplemental to my invention and not indispensable to it, for with the rollers properly adjusted, the advance of the strip will be exact and while at rest, they will hold it firmly. In this latter case, the metal strip is of course not cut off and is in the form of a continuous ribbon as it leaves the machine through the slot 56.

With each downward stroke of the head, a previously shaped anvil (or plurality of anvils) is removed from the strip of metal by a positively acting mechanism, and another anvil is shaped. Both results are effected by the same stroke, and simultaneously, but any given portion of the metal strip is shaped first and then cut from the strip. Preferably the shaping and cutting operations are conducted in this order and may be effected with an extreme degree of rapidity but concurrent action upon the same portion of the strip at the same time is to be avoided. If the metal were bent subsequent to cutting, the cut edge and surface would be deformed, thus rendering the anvils produced of irregular shape and defeating the purpose of this invention.

By completing the bending or shaping action upon the metal, while it is in sheet

form, and then cutting to the desired shape, the contours of the anvil are not altered or affected by the cutting action, but are in fact reinforced during the cutting action which leaves the cut edges accurate both as to size and shape.

The advantages of my device rest not only in the simplicity of design and easy operation of the mechanism involved, but also in its adequate functioning to produce a primer anvil having the desirable properties set forth in my co-pending application above referred to, but may also be adaptable for other comparable products which are required to meet these or similar conditions of shape or use. It is to be noted that such other modifications or adaptations of my invention are comprehended by the above specification and included in the following claims.

I claim:

1. A machine for making primer anvils comprising means for advancing a sheet of metal therethrough, means for shaping a portion of said sheet into a hollow cone, the outer and inner surfaces of which having different conical angles, and means for cutting the portion so shaped from the metal sheet.

2. A machine for making primer anvils comprising means for advancing a sheet of malleable metal therethrough, means for shaping a portion of one side said sheet to an ovoido-conical contour and the corresponding portion of the opposite side of said sheet to the conical contour of the primer anvil, and means for subsequently cutting the shaped portion from the sheet.

3. A machine for making primer anvils comprising a punch having a conical point and a die block having a conical depression, in registry with and of a less acute conical angle than that of the conical point of said punch, and means for advancing a sheet of malleable metal intermittently past the punch and die block, said last named means operating when the punch is in raised position.

4. A punch for stamping out primer anvils having end surfaces adjacent its cutting edge which are approximately perpendicular to its axis, and a tapered projection inside said surfaces, the periphery of the base of said projection being more nearly parallel with the axis of the punch than the periphery of the tip of the projection.

5. A machine for making primer anvils comprising means for feeding a sheet of metal lengthwise along a predetermined path, punch and die members on opposite sides of said path for shaping succeeding portions of said sheet into hollow tapered contour, one of said members moving back and forth transversely of the plane of said sheet, and other punch and die members dis-

posed farther along said path for cutting the anvils from the sheet, the latter punch member having end surfaces extending transversely of the axis of the punch immediately inside its cutting periphery and a tapered protuberance inside said surfaces.

6. A machine for making primer anvils comprising means for feeding a sheet of metal lengthwise along a predetermined path, punch and die members on opposite sides of said path for shaping succeeding portions of said sheet into hollow cone shaped contour, one of said members moving back and forth transversely of the plane of said sheet, and other punch and die members disposed farther along said path for cutting the partially formed anvils from the sheet, the latter punch member having a conical central portion and outer end surfaces approximately perpendicular to the axis of the punch, said surfaces terminating at the peripheral cutting edge of the punch.

7. A machine for making primer anvils comprising a cone-shaped punch, a die block having a conical depression in registry therewith, said punch and die block being adapted to shape between them a metal sheet, and means for cutting the portion so shaped from said sheet.

8. A machine for making primer anvils comprising a conical punch, a die block in registry therewith having a conical depression, adapted to press and shape between them a sheet of metal and an extruding punch adapted to cut a section of the metal so shaped from said sheet perpendicularly thereto.

9. A machine for making primer anvils comprising a conical punch and a die block having in registry therewith a conical depression, adapted to press and shape between them a portion of a sheet of metal and an extruding punch having a point of the same contour as said conical punch and adapted to cut a section of said shaped portion from the sheet perpendicularly thereto.

10. A machine for making primer anvils comprising a punch with an ovoido-conical point and an annular shoulder at its base, a die block having in registry with said punch a conical depression with a cylindrical surface at its base and apex, said punch and die block being adapted to press and shape between them a sheet of metal, and an extruding punch having an ovoido-conical point and an annular shoulder at its base, and adapted to register with a corresponding aperture in the die block and with a shaped portion of said metal sheet and to cut from the latter a right-cylindrical section with longitudinal grooves therein.

11. A machine for making primer anvils from sheet metal comprising means to shape a portion of said metal to the desired cone-shaped contour and a punch having a point

of such size and shape as to exactly fit said cone-shaped portion of the sheet and to cut a section therefrom perpendicularly to said sheet.

12. A machine for making primer anvils comprising a die block, a pair of rollers engaging between them a strip of malleable metal and adapted to intermittently advance said strip a given distance through a slot in the die block and an edge, movable over the exit end of said slot, operated alternately with the advancing period of said rollers to provide a definite period during which said strip shall be held stationary.

13. A machine for making primer anvils comprising a die block, a feeding device for intermittently advancing a malleable metal strip longitudinally for a given distance through a slot in the die block, a knife edge movable over the exit end of said slot alternately with the period of advance of the metal strip, to cut off and arrest its progress, and an embossing and punching die adapted to operate upon different portions of said strip while it is stationary.

14. The process of making primer anvils for explosive shells comprising shaping two sides of a thin sheet of metal to different conical contours and cutting from said sheet a substantially cylindrical section containing said shaped portion.

15. The process of manufacturing anvils for cartridge primers comprising the steps of indenting a sheet of malleable metal to a desired truncated-conical contour and cutting from said sheet the section containing the portion so shaped.

16. The process of making primer anvils for explosive shells, comprising pressing one side of a thin malleable metal sheet into a truncated-conical depression and the other side over a cone, and cutting the portion so shaped from the sheet by a concentric cylindrical punch.

17. A process for the manufacture of a primer anvil for explosive shells comprising the steps of pressing a sheet of malleable metal into the shape of a hollow cone, with a boss at its exterior apex, a cylindrical surface adjacent the base of said cone, a flat surface substantially at right angles to the axis of said cylindrical surface, and cutting the portion so shaped from the metal sheet.

18. The process of making primer anvils for explosive shells comprising simultaneously indenting one side of a metal sheet to form a cone-shaped point provided with an annular shoulder at its base, and forcing the corresponding opposite side of said sheet into a conical shape having an enlargement at its apex and at its base and subsequently cutting from said sheet a substantially right-cylindrical section including the portion so shaped.

19. A process for the manufacture of a

primer anvil for explosive shells, comprising the steps of first indenting one side of a sheet of malleable metal to form a cone shaped point provided with an annular shoulder, simultaneously compressing the opposite side of said sheet into a concentric conical form having at the apex and base of

said form cylindrical enlargements, and secondly cutting from said metal sheet the portion so shaped and diametrically opposite 10 notches from the margin thereof.

Signed by me at Lowell, Massachusetts, this 20th day of June, 1923.

JAMES A. MURPHY.



DEFENDANT'S EXHIBIT "O"

S. Loew Patent No. 2,444,706

Filed Aug. 12, 1944

Patented July 6, 1948

July 6, 1948.

S. LOEW

2,444,706

SLIDE FASTENER MACHINE

Filed Aug. 12, 1944

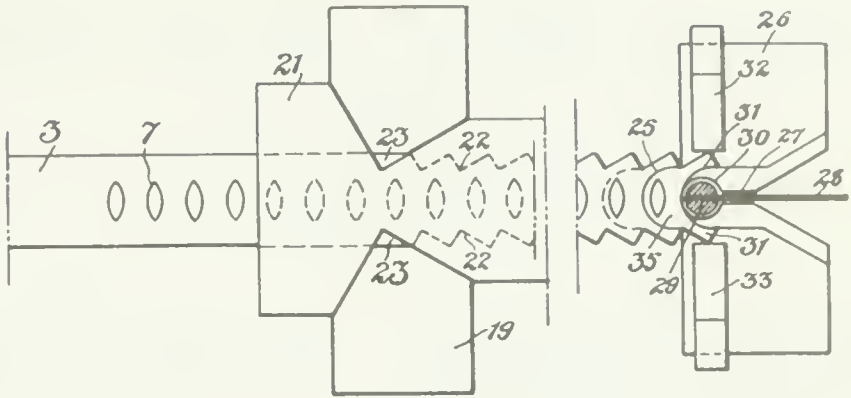


Fig. 1

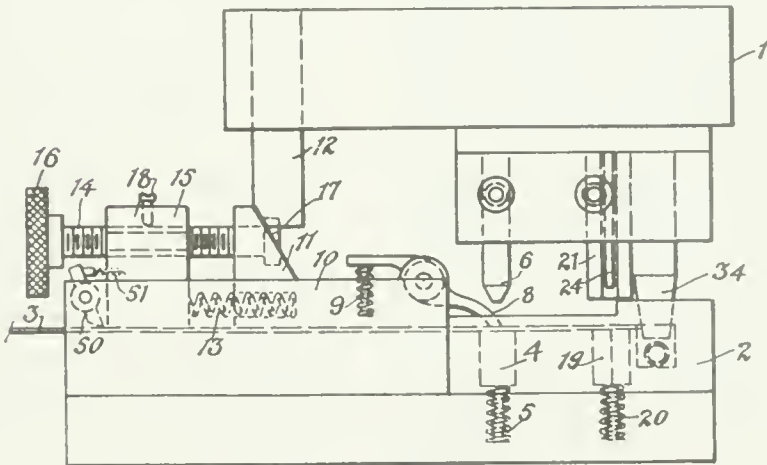


Fig. 2

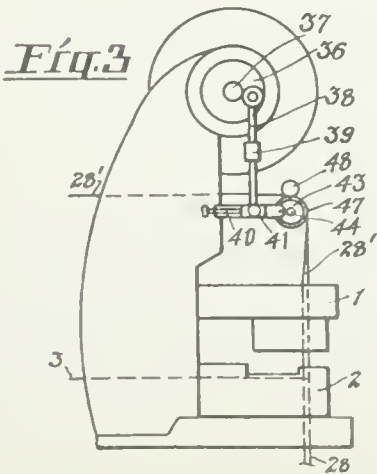


Fig. 3

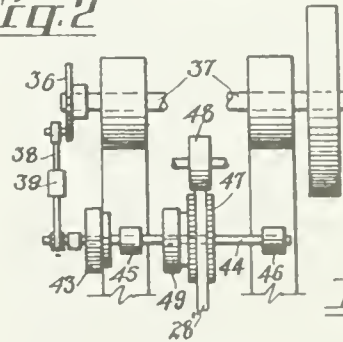


Fig. 4

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UNITED STATES PATENT OFFICE

2,444,706

SLIDE FASTENER MACHINE

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Application August 12, 1944, Serial No. 549,236

In Canada July 25, 1944

5 Claims. (Cl. 153—1)

1

This invention relates in general to machines for the manufacture of slide fasteners, and more particularly to automatic machines for the manufacture of slide fastener stringers from which the finished slide fasteners are made.

The primary object of this invention is to provide a single machine for the complete manufacture of slide fastener stringers, wherein the operation is continuous.

Another object is to provide an improved machine for making slide fastener elements from stock wire with a minimum of waste.

Still another object is to provide greater precision in the attachment of the slide fastener elements to the stringer tape.

It is also an object of this invention to provide a slide fastener stringer of more durable construction.

Still another object is to reduce cost of operation in the manufacture of slide fastener stringers.

The foregoing objects together with others will be apparent from the following description considered in connection with the drawing in which:

Figure 1 shows a plan of the more important stages of operation.

Figure 2 shows an elevation of the main part of the machine.

Figure 3 is a diagram of the general arrangement of the machine in combination with a standard power press of which it is a part, and

Figure 4 is a front elevation of the spacer mechanism for spacing the fastener elements on the tape.

The machine as shown in the drawings, consists of an upper die 1 and a lower die 2. The stock wire which is flat is fed into the lower die 2 as shown at 3. When the wire 3 reaches the first station in the die 2 it is immediately over a forming die 4 which is supported on a spring or a plurality of springs 5. A punch 6 which is located in the die 1 constitutes the upper part of the die 4 so that when the die block 1 comes down, a cavity 7 is formed in the wire, generally of the shape shown in Figure 1. This cavity will hereinafter be referred to as the embryo.

The upper die 1 and lower die 2 are used in combination with a press. The upper die block is attached to the pitman of the press and the lower die block is fixed to the table of the press.

The lower die block 2 is provided with a reciprocating finger 8 which is pressed against the wire 3 at the point where cavity 7 has been formed, by means of a spring 9. The finger 8 is pivotally attached to a movable section 10

2

which is part of the die block 2. The section 10 is provided with a cam 11, and the die block 1 is provided with a corresponding cam 12. When the die 1 comes down to punch the embryo 7, the cam 12 slides against the cam 11 thus pushing section 10 with its attached finger 8 out of the way of the descending punch 6. When the punching operation of 6 is completed, the die 1 ascends allowing section 10 to move forward due to the action of spring 13. The finger 8 moves forward with the section 10. The point of the finger 8 is made so that it fits into the embryo 7, so that when the finger moves forward it pulls the wire 3 along with it so that the wire is advanced a predetermined distance. The distance the wire is advanced is determined by the following arrangement. A threaded bolt 14 is screwed into a tapped block 15 which is part of the die 2. One end of this bolt is provided with knurled head 16, and the other end of the bolt is provided with a stop 17. The cam 11 is bored with a hole to permit the passage of the bolt 14, but said hole is small enough to prevent the passage of the stop 17, so that by adjusting the length of the bolt 14 between the block 15 and the cam 11, the movement of the section 10 and the finger 8 is determined. A setscrew 18 locks the bolt 14 into position.

A plurality of embryos 7 are punched in the wire before said wire reaches the next stage of operation. At this stage the wire passes between a lower punching die 19 which is supported on a spring 20, and an upper die 21 which is part of the die block 1. An enlarged diagram of this set of punching dies is shown in Figure 1, where the action between the die 19 and the die 21 punches out a serration 22 on either side of the wire 3. The punched scrap 23 is blown away by means of compressed air through the pipe 24 which is situated in the grooved part of the die punch 21. The die 21 is also provided with a semi-circular cutting edge for the purpose of cutting out a semi-circular section as shown at 25, the use of which will be described in connection with the final stage in the making of the slide fastener stringer.

The final stage in the operation of the machine may be more fully comprehended by reference to both Figures 1 and 2. The lower die block 2 is also provided with a guiding block 26 which has a slot 27 for guiding the stringer tape 28. As this tape is usually finished on one of its edges with a pair of rounded cords 29, a circular guide 30 is also provided in the block 26 to accommodate the said cords. When the wire 3 reaches the po-

3

sition where the cord 29 nests within the died out section 28 which forms the inner wall of the element, the jaws 31 become located between two opposite clamping hammers 32 and 33. The die 1 is provided at this point with a pair of cams 34, 34. On the downward stroke of the die 1 the cams 34, 34 compress the hammers 32 and 33 against both sides of the element jaw 31 so that the element becomes permanently clamped to the tape 28 at its corded edge.

Throughout this entire operation the individual element as indicated by 31 remains an integral part of the wire 3, and only after the jaws have been clamped onto the tape, the element 35 is severed from the wire 3 along the line 25 by the die 31. This of course gives greater stability to the individual element than is provided in existing machines where such elements are individually and separately attached to the tape, thereby providing a greater degree of precision to the spacing of the elements on the tape.

The tape 28 is fed into the machine in a vertical position. It is held stretched to the required degree of tension between the reel on which it is originally wound and a spacing mechanism such as is shown in Figures 3 and 4. To an eccentric wheel 36 which is attached to the press shaft 37, is pivotally attached an arm 38 whose length is adjustable by means of a turn-buckle or some such mechanism 39. The arm 38 is also pivotally attached to a horizontal arm 40, the bearing at this point being on a movable block 41 for the purpose of adjusting the location of this bearing along the arm 40. One end of the arm 40 is eccentrically attached to a friction clutch 42. Shaft 44 is supported by bearings 45 and 46 which are in turn supported by the walls of the press. A knurled wheel 47 is mounted on the shaft 44 in a position above the guide block 28. The tape with the fastener elements attached thereto which will now be referred to as 28' rolls over the wheel 47 and is held tightly pressed against the knurls by an upper wheel 48. The wheel 47 is attached to the shaft 44 by means of a friction clutch 49 which is directly attached to the shaft 44, and the clutch 43 is similarly attached to the said shaft. The clutches 43 and 49 are so arranged as to provide rotation to the shaft 44 in one direction only so that one stroke caused by the eccentric 36 turns the shaft 44 while the return stroke has no effect upon said shaft. Thus an intermittent movement is imparted to the tape, the intermissions providing the proper spacing to the fastener elements 35.

In actual practice the machine operates in the following manner, although it is not intended thereby to limit this invention to the specific figures which follow. The flat wire is fed into the die and is moved forward by the reciprocating finger pushing on the embryo which has been drawn in an inverted position in the first station of the die. After the wire has fed forward twenty-seven times it is now in a position for the notching dies to function. These also are inverted with the male die being in the lower portion. At this point the only blanking out of the entire process takes place, and the wire leaving this point has the embryo formed therein and serrated edges. The strip continues to be fed forward so that it now lays on the die which blanks the element off the strip of wire. In order that the element that is to be cut off be held stationary while it is being attached to the tape, the

4

upon the tape takes place before the shearing off of the element is completed. In order that the element remain on top of the blanking die, the wire which is progressing through the die has to go down under the blanking punch, notching punch, and the impresser punch. These punches are all the same length and therefore carry the wire down evenly, while the wire is thus going down it is supported by spring loaded pads which on the upward stroke of the press return to their normal level. The entire procedure is intermittently repeated.

The machine is also provided with a catch 50 in the lower die block 2 at the entrance of the stock wire. This catch is pressed against the stock wire by a spring 51. The catch is at an angle leaning away from the direction in which the wire 3 travels, so that the sharp edge of the said catch prevents the wire from backing out of die.

It is obvious that changes might be made in nonessentials of the structure of the machine while retaining the essentials of the invention and I do not consider it limited to the specific construction shown; therefore what I claim is:

1. An automatic machine for the manufacture of slide fastener stringers in combination with a press, comprising an upper die block which is attached to the pitman of the press and a lower die block which is fixed to the table of the press, a series of upper and lower dies or punches for successively drawing an embryo cavity, serrating the edges, and punching off individual elements from a stock wire, means for clamping said elements to a standard tape, and means for feeding said stock wire to the successive stages in the operation comprising a sliding section which is part of the lower die block, a reciprocating finger which pushes the stock wire by engaging the embryo cavity and which is part of said sliding section, a spring in compression which presses against one end of said finger to provide engagement between the finger and embryo in the stock wire, a cam in the upper die block which engages a corresponding cam on said sliding section which retains the reciprocating finger, a compression spring between said sliding section and a fixed part of the lower die block, reciprocating motion being provided by the action of said cam and spring, and means for controlling the extent of said motion including a threaded bolt which limits the motion of the sliding section imparted by the cam on said sliding section.

2. A machine for the manufacture of slide fastener stringers comprising in combination upper and lower die blocks for relative movement toward and from one another with reciprocating motion, punch and die means carried by the respective die blocks and operable with each reciprocation of the die blocks to form an embryo cavity in flat stock wire positioned between the die blocks, apparatus for feeding the stock wire forward including a finger that slides back and forth lengthwise of the flat stock wire with each reciprocation of the die blocks and in constant contact with the stock wire and against metal displaced by the operation of the punch and die that form the embryo cavity, finger-supporting and reciprocating mechanism carried by one die block, abutment means carried by the other die block in position to operate said mechanism for moving the finger with each reciprocation of the die blocks, and other die means carried by the die

5

one end of a slide fastener element, and for cutting off the end portion of the wire stock to complete the slide fastener element after the element is in position astride a tape.

3. An automatic machine for the manufacture of slide fastener stringers including in combination a press, an upper die block attached to the pitman of the press and a lower die block fixed to the table of the press, a series of cooperative punches and dies carried by the die blocks for successively forming an embryo cavity, shaping the edges, and punching off individual elements from a stock wire after said elements have been successively advanced to positions astride a tape, clamping mechanism carried by one of the die blocks for clamping individual elements to the tape, deciprocating feeding mechanism carried by one of the die blocks for feeding the stock wire with a step-by-step motion past the successive dies and punches and to said clamping means, abutment means on one of the die blocks for operating the clamping mechanism and the feeding mechanism carried by the other die block with each stroke of the press, a spring for returning the feed mechanism after each stroke, a finger comprising a part of the feeding mechanism with an end portion that engages metal displaced by the forming of the endmost embryo cavity, and means for holding said end portion of the finger in contact with the stock wire.

4. A machine for the manufacture of slide fastener stringers comprising in combination with a press, a reciprocating finger operated by the movement of an upper die block connected to the pitman of the press for intermittently feeding the stock wire from which slide fastener elements are made, upper and lower die combinations for punching embryos in the stock wire, a notching die adjustably attached to the upper die block and a complementary notching die in a lower die block supported by a compression spring, the upper and lower notching dies being for the purpose of serrating or notching the edges of the stock wire to form the outer contour of the jaw of the fastener element, said die combinations also including means for shearing off

6

the individual fastener elements from the rest of the stock wire after each of said elements has been brought into a position astride a standard slide fastener tape, and means for attaching the elements to the standard slide fastener tape.

5. A machine for the manufacture of slide fastener stringers comprising in combination with a press, a reciprocating finger for feeding stock wire, dies for drawing embryos in said wire, dies for forming the edges of said wire and punching the individual fastener elements from the said stock wire, means for clamping the said elements to standard stringer tape, and means to feed the tape to space the fastener elements thereon including a shaft which is supported from the walls of the press above the upper die block, a knurled wheel mounted on said shaft by means of a friction clutch, a second friction clutch which is attached to the end of the shaft, an oscillating arm which is attached eccentrically to the second friction clutch and operatively attached at its other end to said main shaft, and a connecting rod between the said eccentric on the press shaft and the osculating arm, so that upon the rotation of the press shaft an intermittent motion in one direction is imparted to the spacer shaft and the knurled wheel thereon, and to the slide fastener stringer between the said knurled wheel and a pressure wheel provided for that purpose.

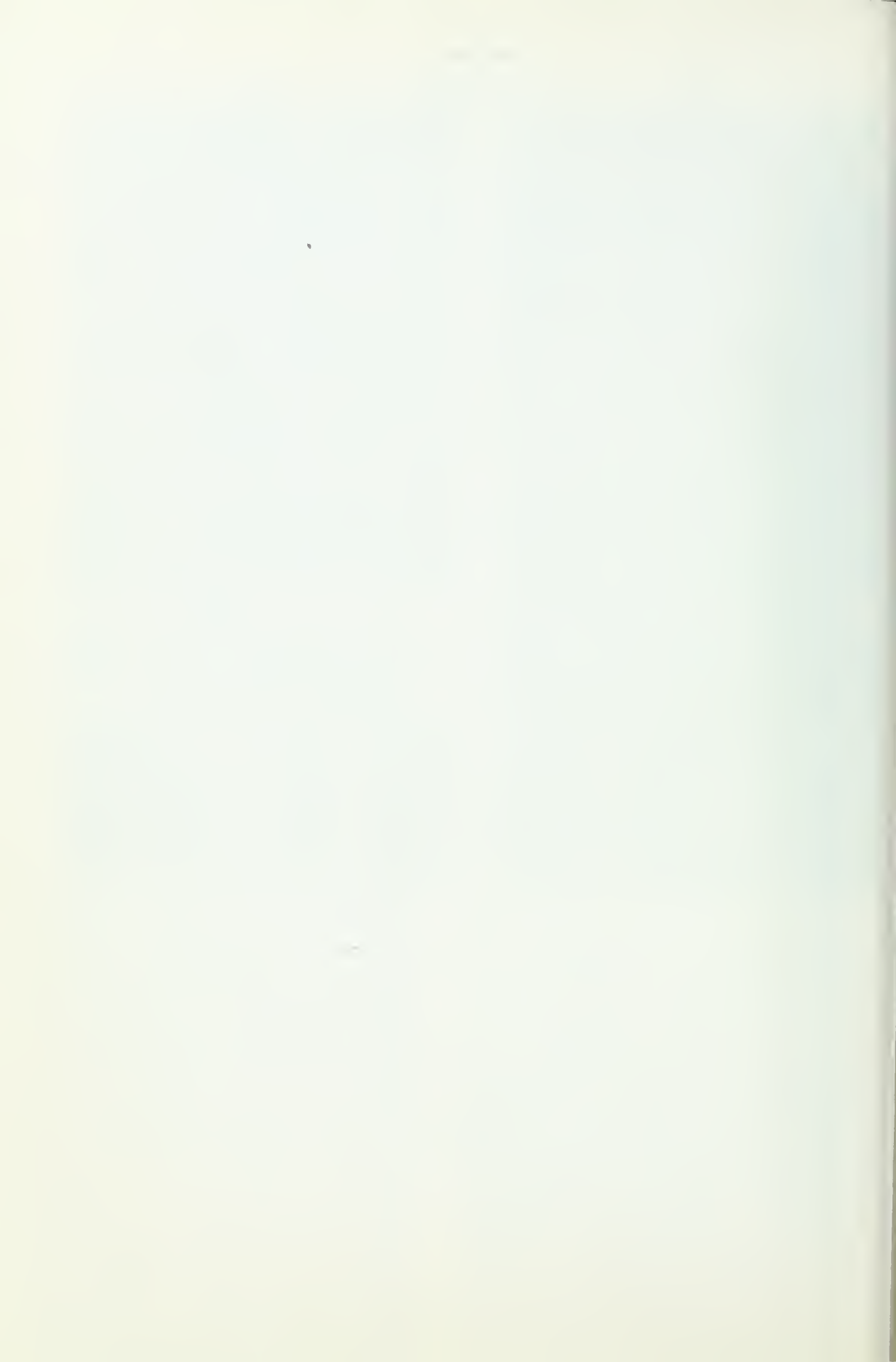
SIGMUND LOEW.

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DEFENDANT'S EXHIBIT "AM-3"

D. Silberman Patent No. 2,437,793

Filed Sept. 23, 1944 Patented March 16, 1948

[Note: Defendant's Exhibit "AM-3"—D. Silberman Patent No. 2,437,793 is the same as Plaintiff's Exhibit No. 3 set out at page 1664 of this printed record.]

DEFENDANT'S EXHIBIT "BF"

G. Sundback Patent No. 1,434,857

Filed Oct. 19, 1918

Patented Nov. 7, 1922

G. SUNDBACK.
MAKING FASTENERS.
APPLICATION FILED OCT. 19, 1918.

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Patented Nov. 7, 1922.
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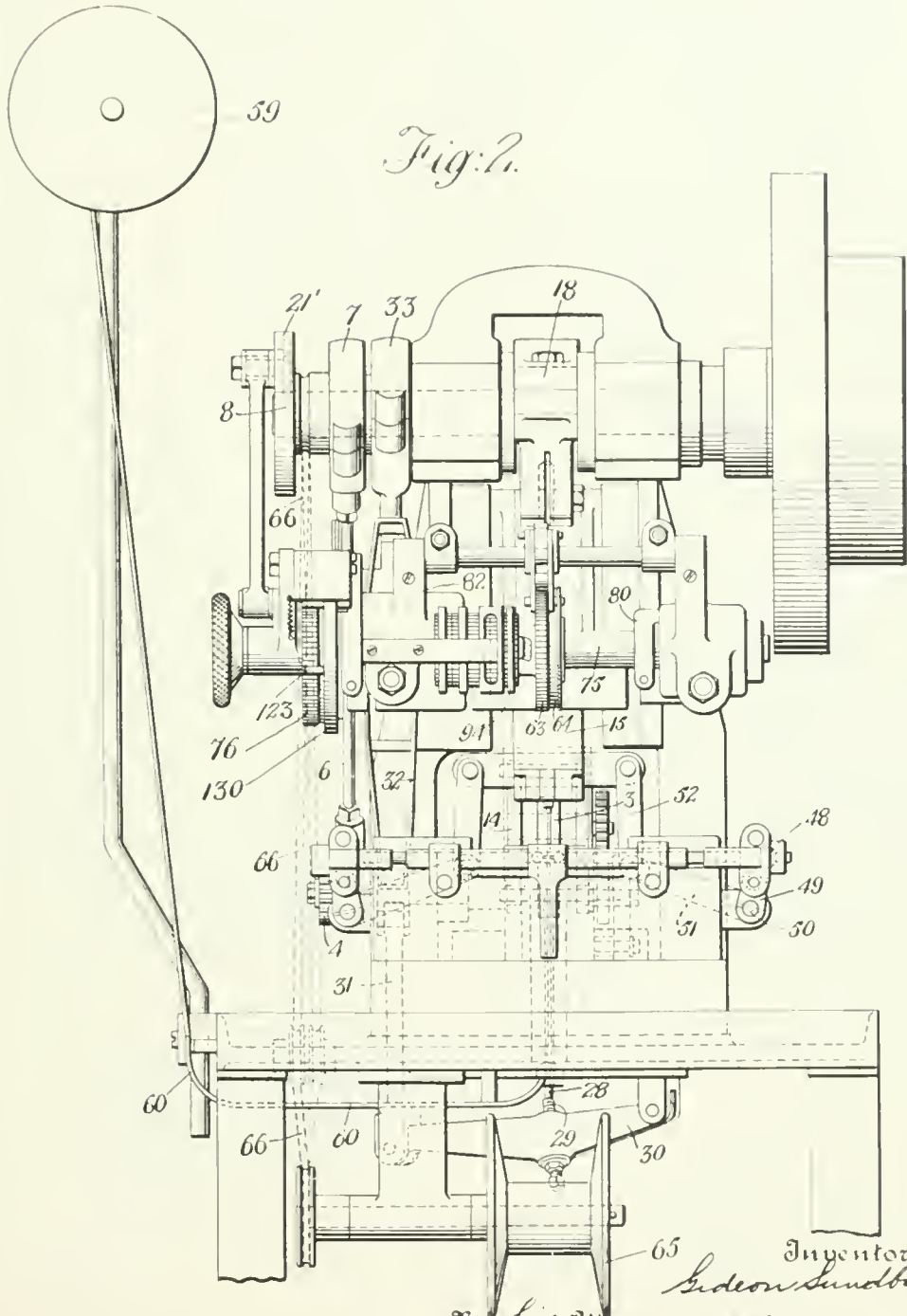


Fig. 1.

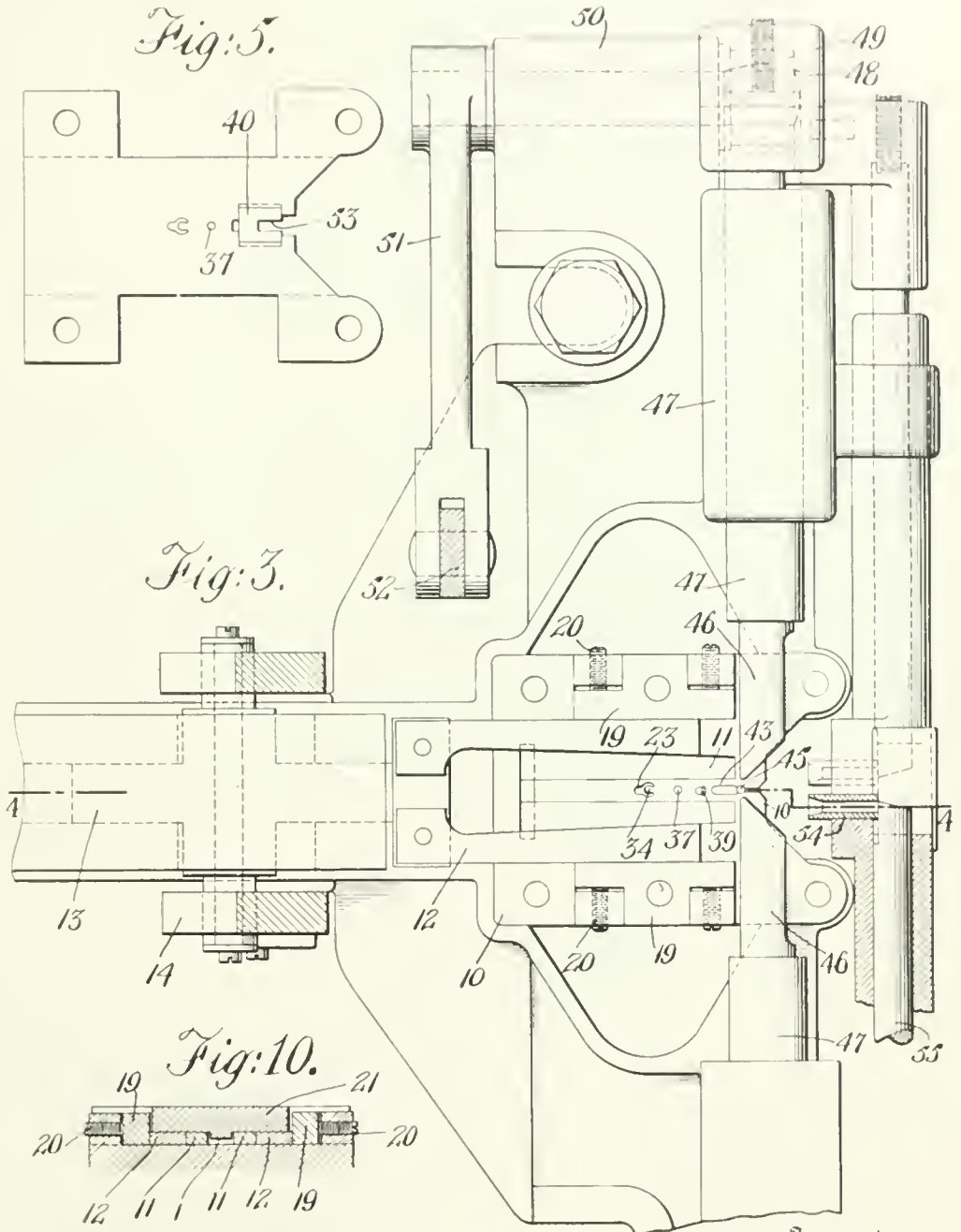
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1,434,857.

Patented Nov. 7, 1922.

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1,434,857.

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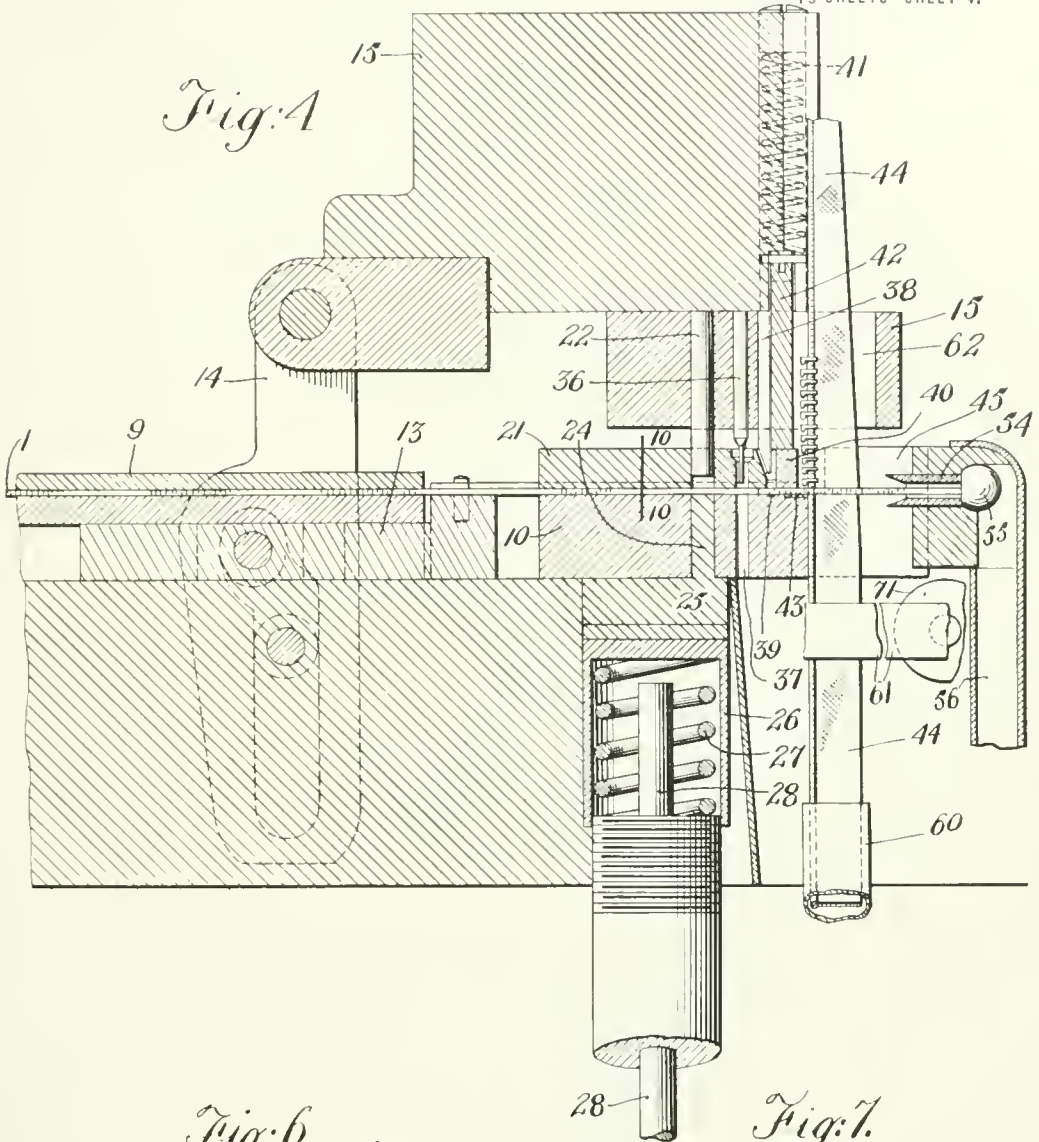


Fig. 4

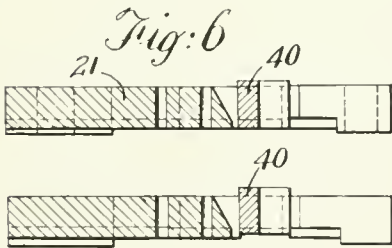


Fig. 8.

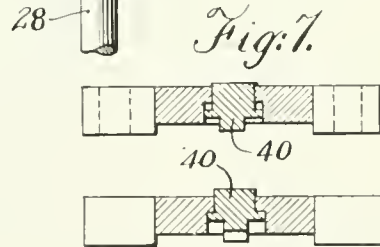


Fig. 7.

Fig. 9. Inventor

By his Attorney *Gideon Sundback,*
J. Hooster

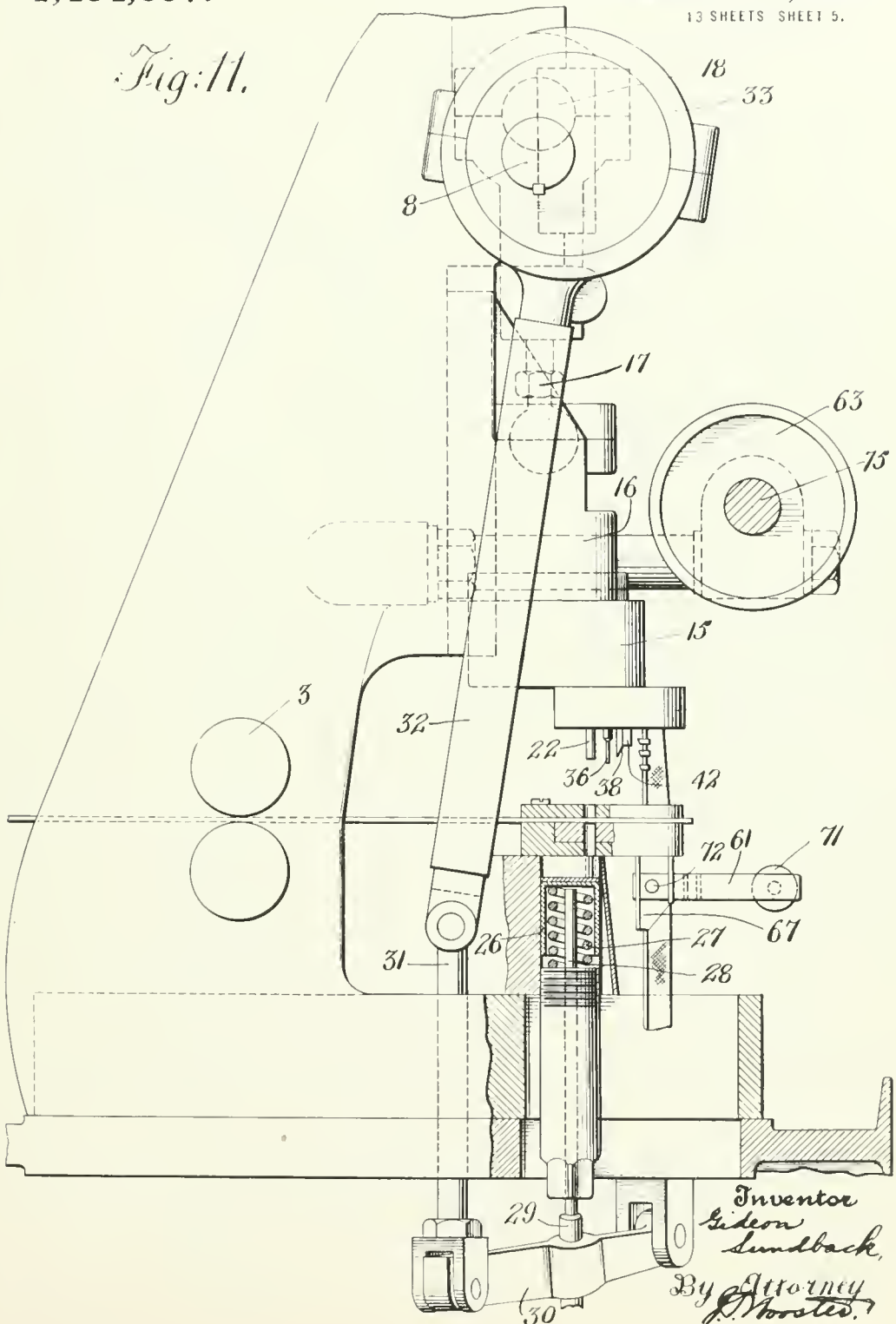
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Fig. 11.



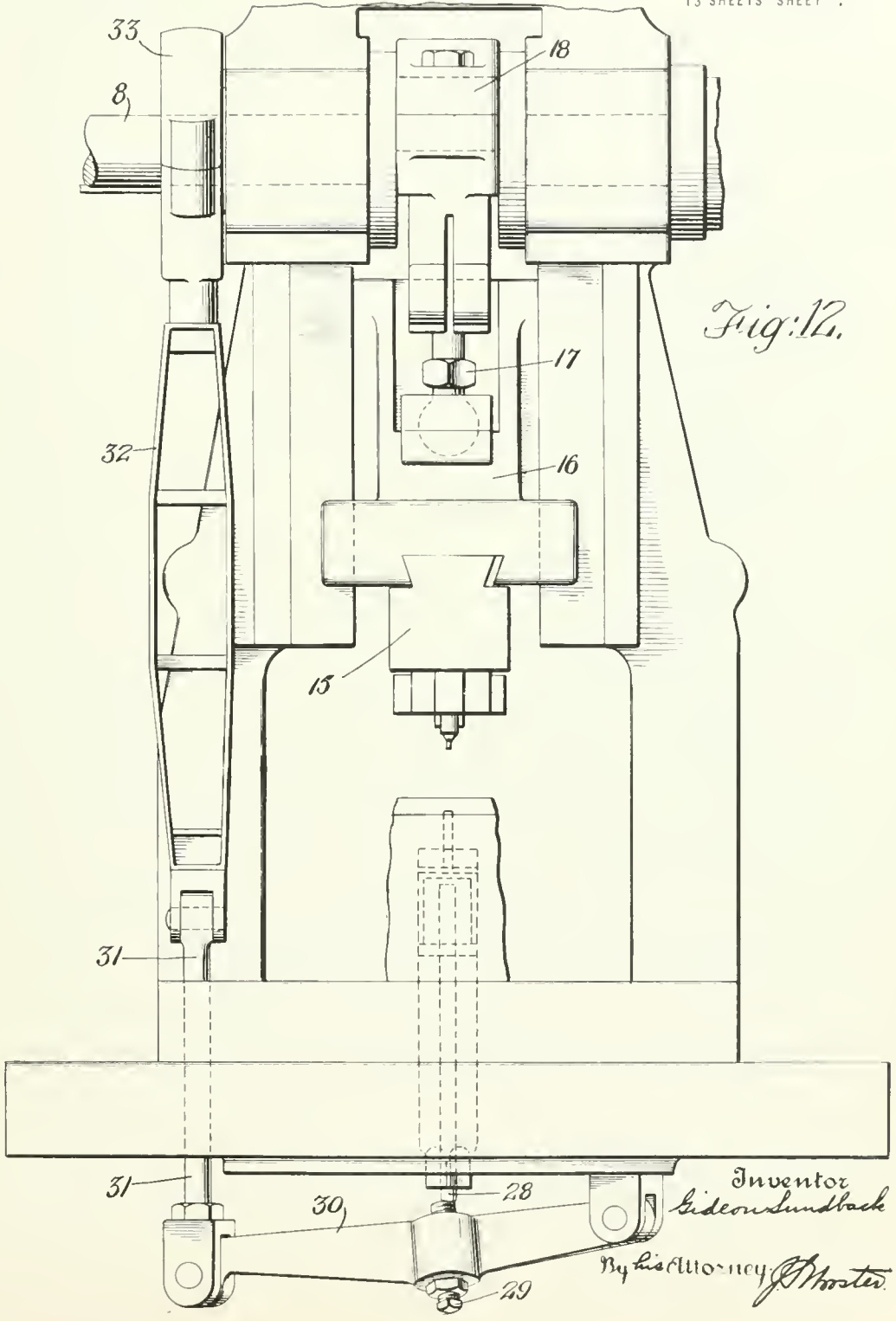
G. SUNDBACK.
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APPLICATION FILED OCT. 19, 1918.

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Fig. 12.



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Fig. 14.

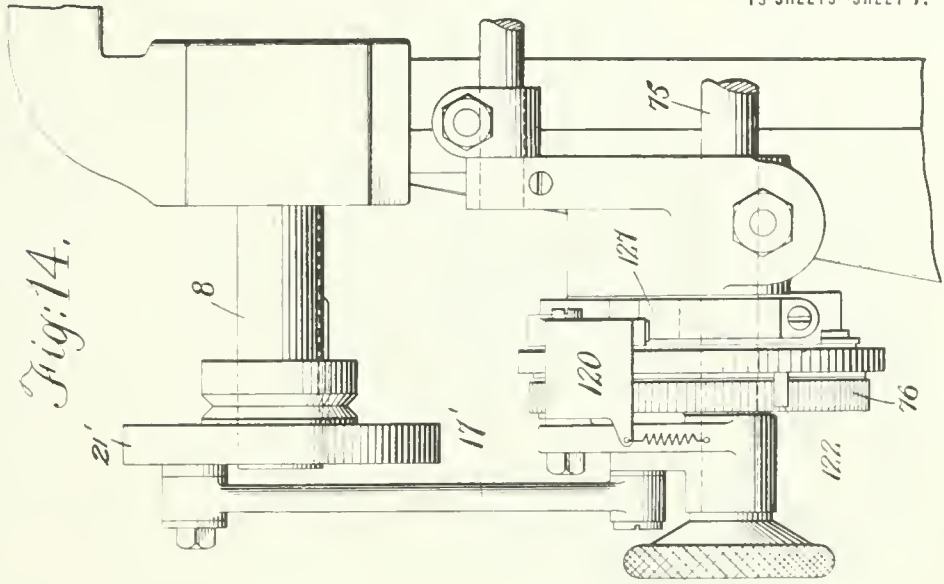
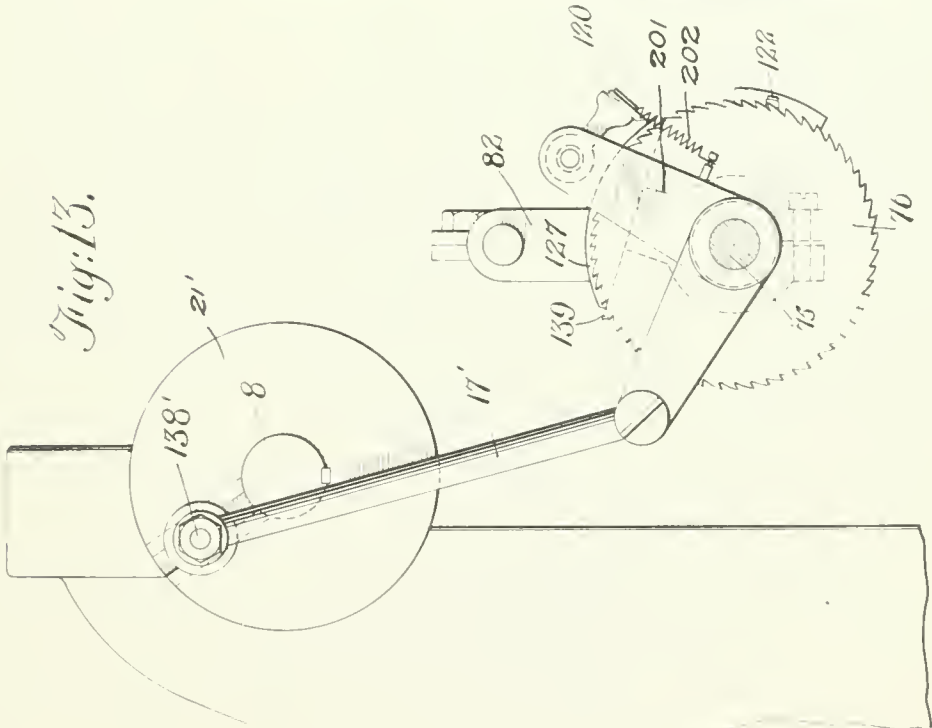


Fig. 15.



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Patented Nov. 7, 1922.

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Fig. 16.

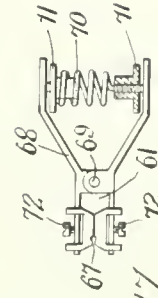
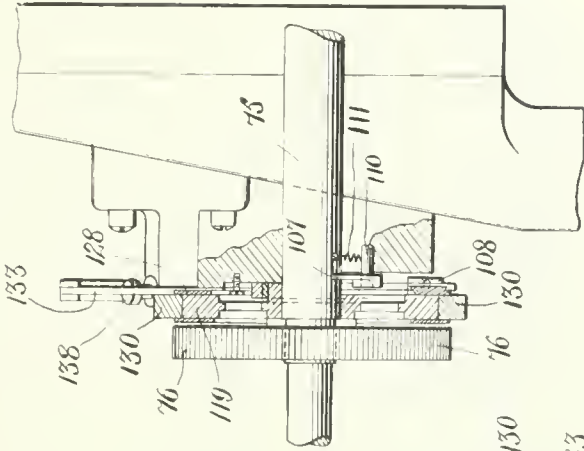
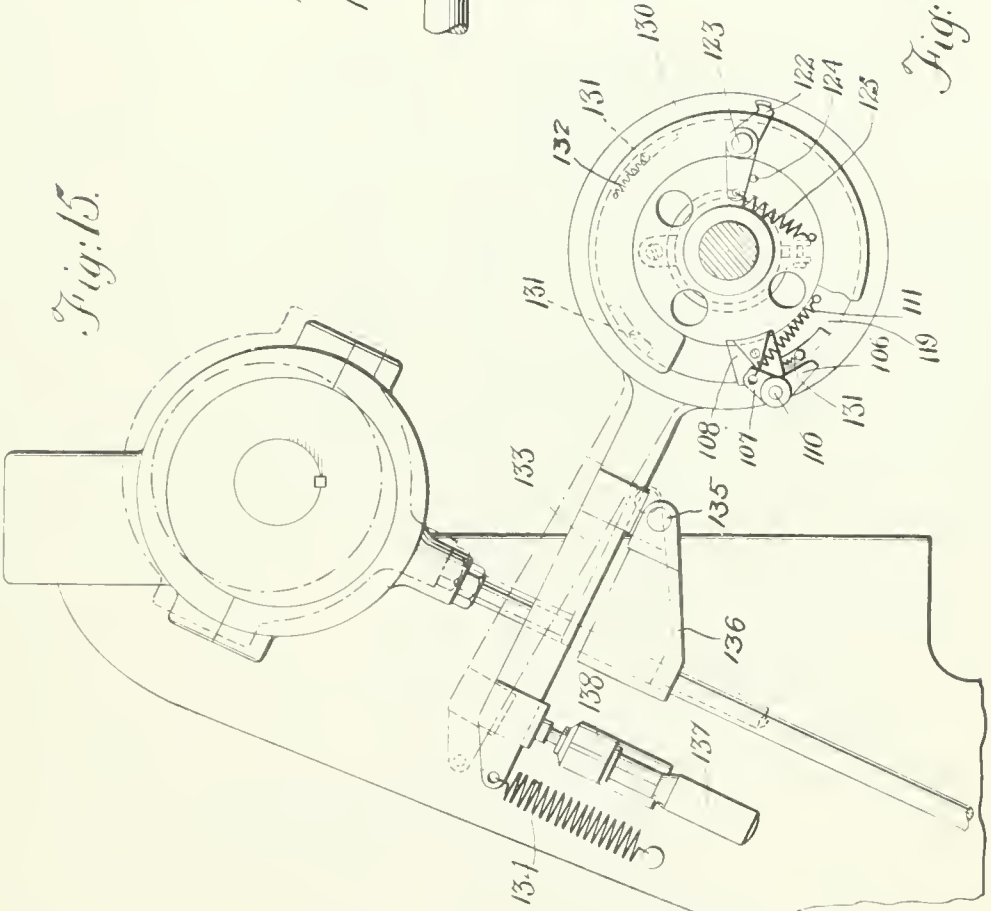


Fig. 17.

Fig. 15.



Inventor

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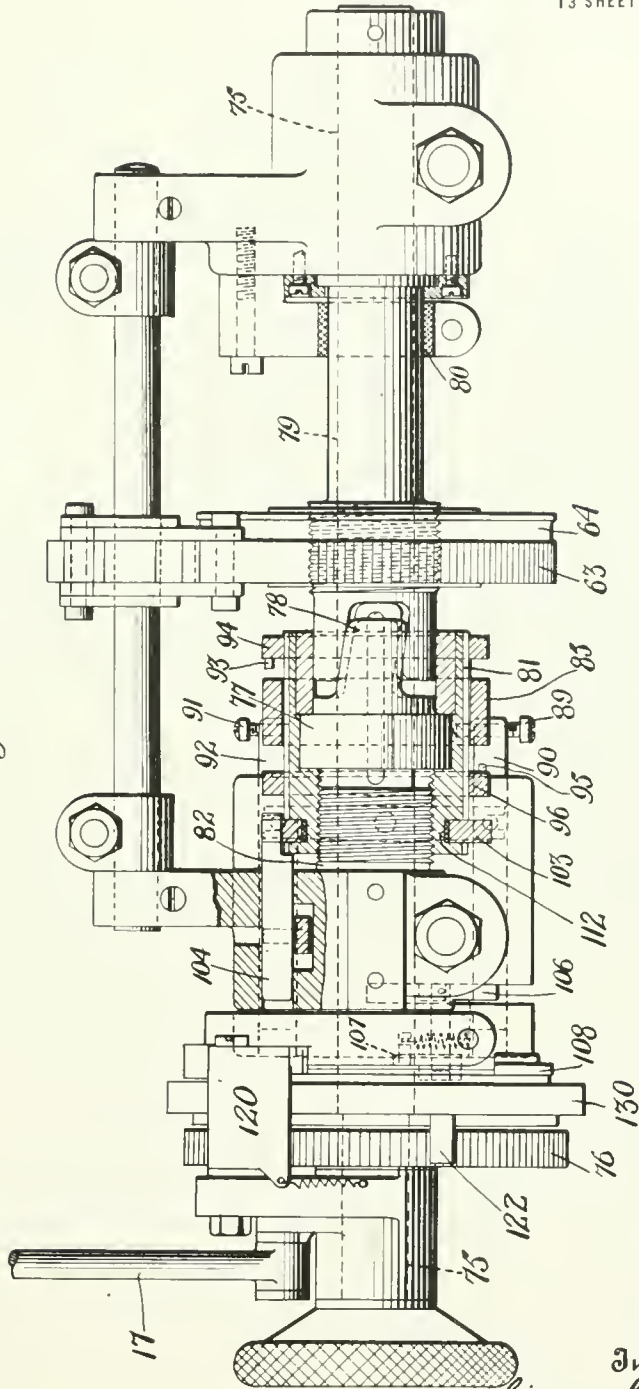
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Patented Nov. 7, 1922.

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Fig. 18.



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Patented Nov. 7, 1922.
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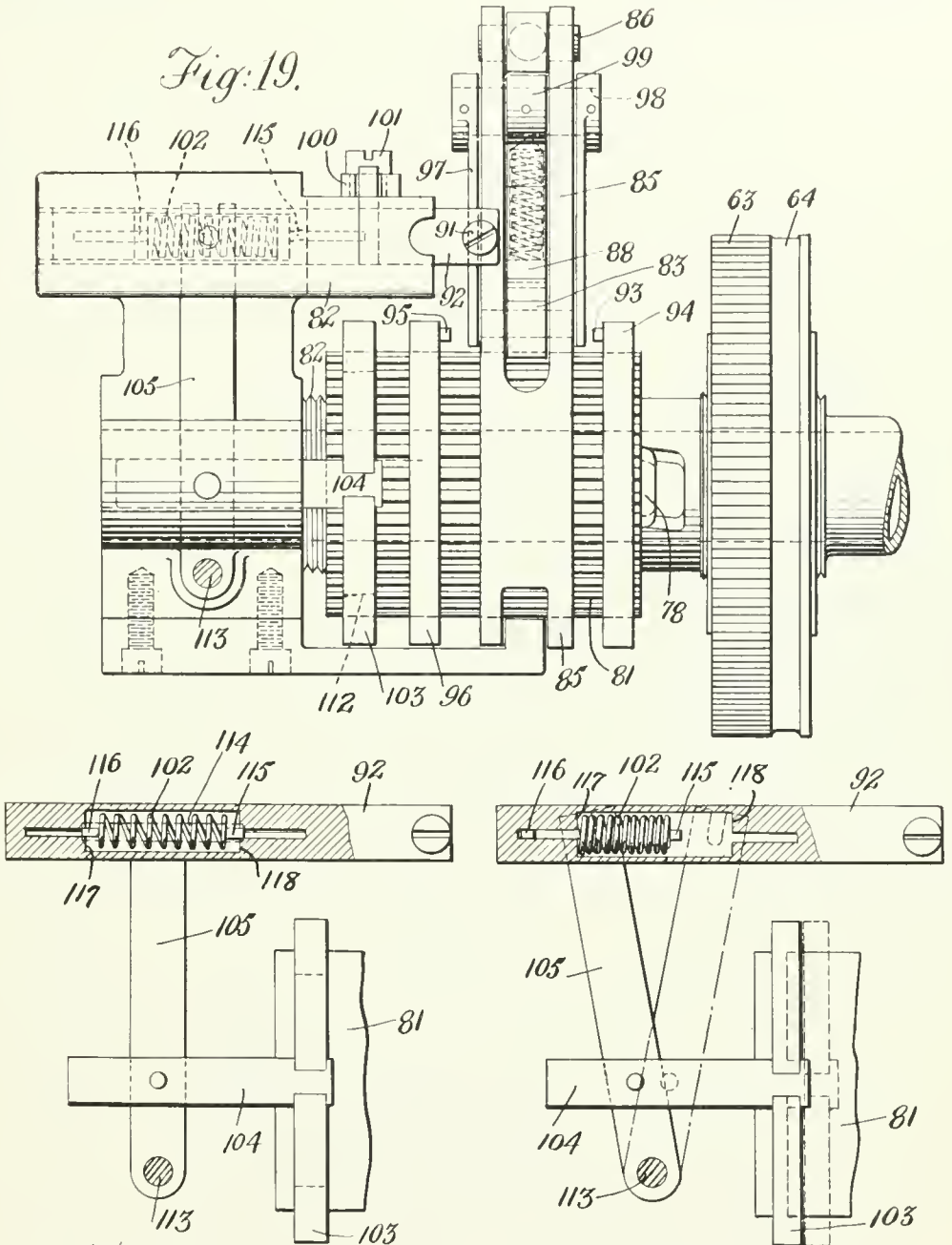


Fig. 24.

Fig. 25. Inventor
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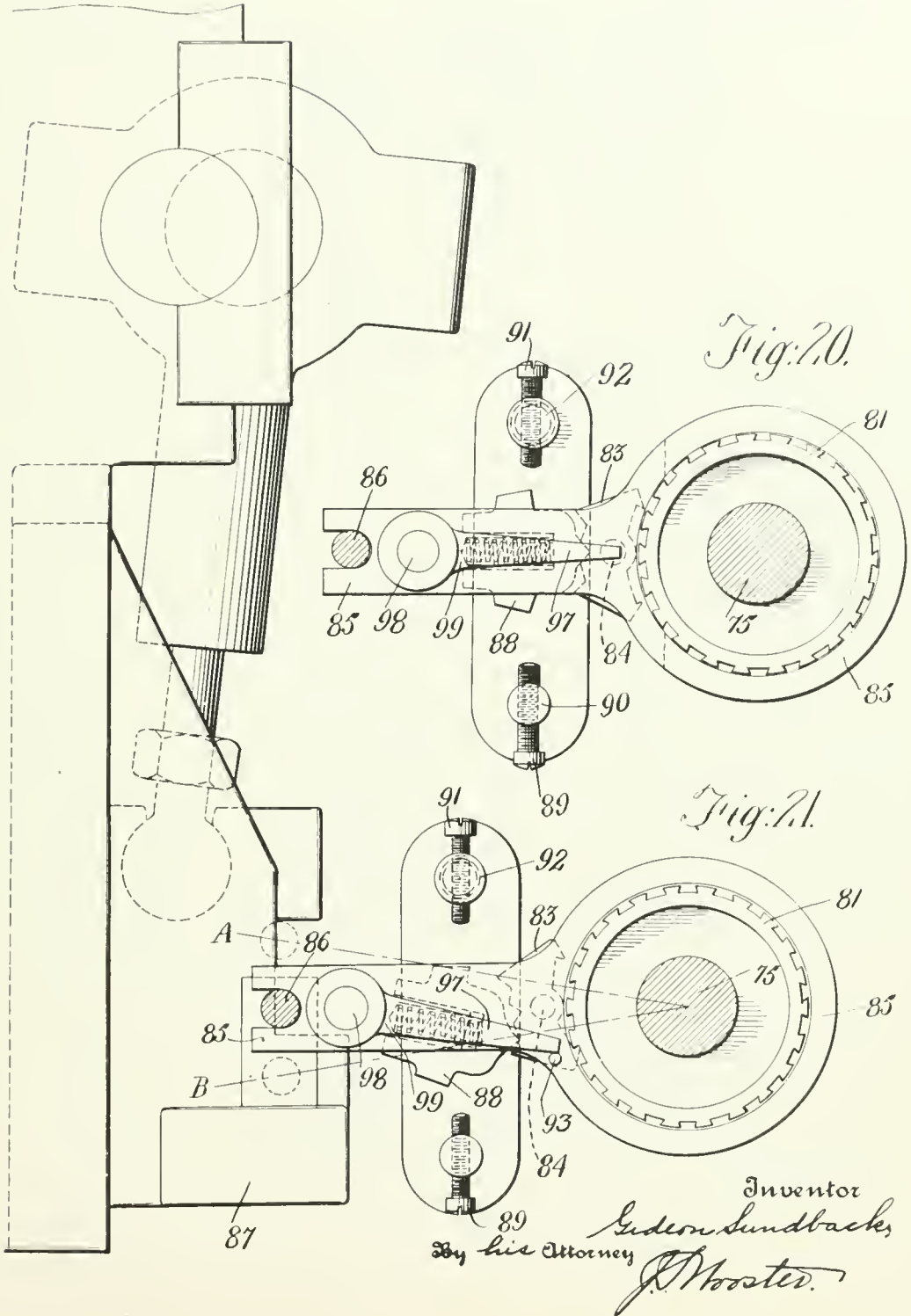


Fig. 20.

Fig. 21.

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 APPLICATION FILED OCT. 19, 1918.

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Fig. 23.

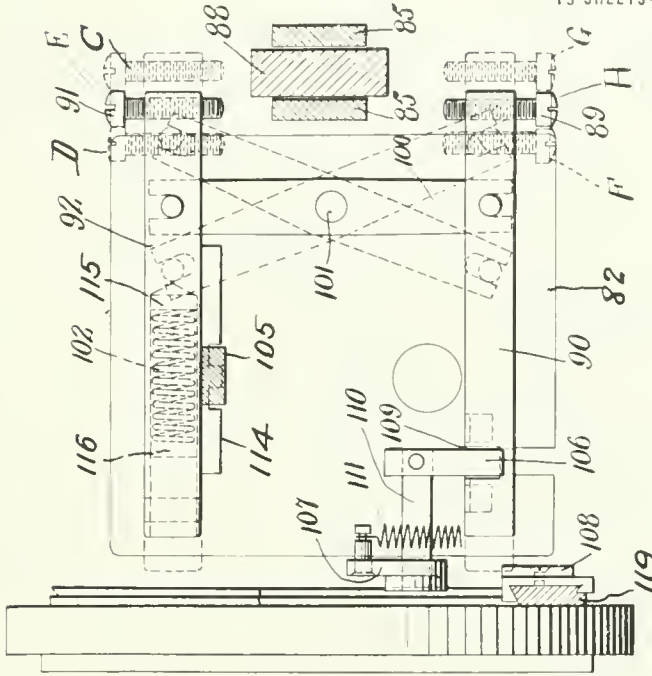
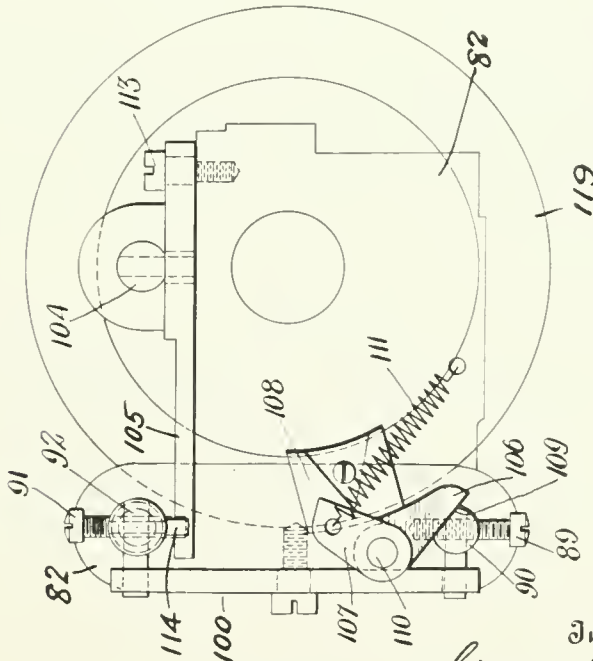


Fig. 27.



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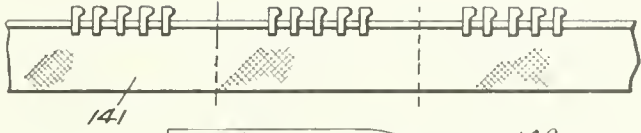


Fig: 27.

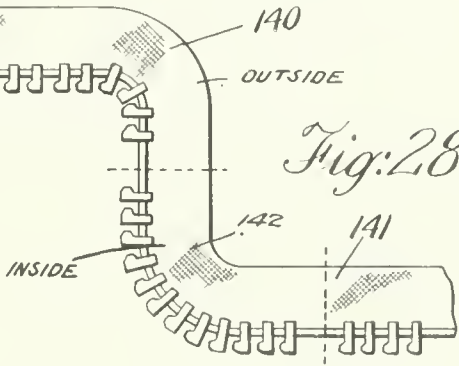


Fig: 28.

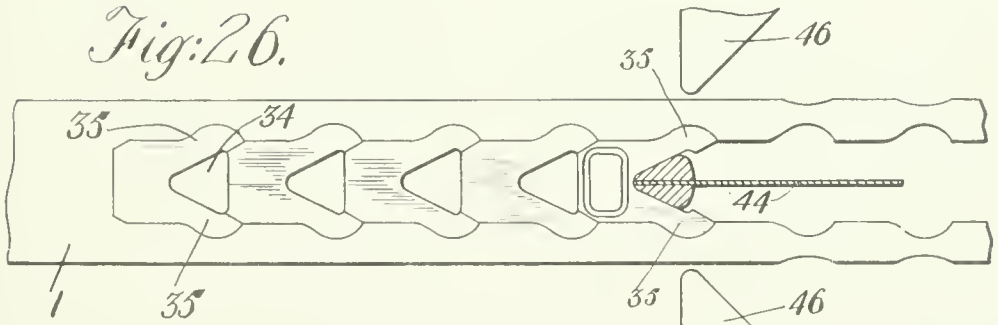


Fig: 26.

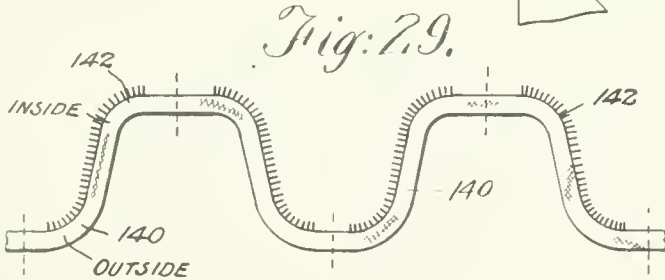


Fig: 29.

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UNITED STATES PATENT OFFICE.

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MAKING FASTENERS.

Application filed October 19, 1918. Serial No. 258,918.

To all whom it may concern:

Be it known that GIDEON SUNDBACK, a subject of the King of Sweden, and resident of Meadville, in the county of Crawford and State of Pennsylvania, has invented certain new and useful Improvements in Making Fasteners, of which the following is a specification.

This invention relates to a machine and method for producing straight and curved fastener stringers, such as shown in my Patent No. 1,219,881 dated March 20, 1917, and also the curved stringers shown in my application Serial No. 159139, filed April 2, 1917.

By the method herein disclosed, fastener stringers embodying a predetermined number of interlocking jaw members are made on a straight stringer for a predetermined curve, which are cut apart and assembled on the curved closure, one stringer with varying spacing of the interlocking members combining with a succeeding one with different spacing to form a complete accurately fitting fastener.

The uses of this fastener are very diversified, straight fasteners as shown in said patent being used on corsets, money belts, footwear, clothing, stretchers, tents and other closures of various kinds, while curved fasteners as shown in said application are used for automobile curtains, hand hole closures, etc. where by reason of the curve, a wider or more convenient opening is obtained than with an equal length of straight fastener. In order to produce a curved fastener which will be easy to apply and properly function, the spacing of the members on the outer stringer should vary relatively to the spacing on the inner stringer, while on a straight fastener, the spacing is the same.

The general type of machine is disclosed in my Patent 1,331,884, dated February 24, 1920, of which this application is a continuation in part, the novel features of this application being specifically in the tape feeding mechanism, and broadly in the combinations thereof with the jaw member making and setting mechanisms of said earlier application.

In the accompanying drawings,

Fig. 1 is a side elevation of a machine,

Fig. 2 is a front elevation,

Fig. 3 is a plan view showing the die and die block,

Fig. 4 is a vertical section on the line 4—4 of Fig. 3,

Figs. 5, 6, 7, 8 and 9 are details of the top or stripper plate, which hold the blank down on the dies;

Fig. 10 is a cross-section on the line 10—10 of Fig. 4 showing the passageway for the blank;

Figs. 11 and 12 are side and front elevations, respectively, showing the movements by which the punching is pressed back into the blank as the punchers are withdrawn;

Fig. 13 is a side view of the tape feeding mechanism;

Fig. 14 is a front view of the tape feeding mechanism;

Fig. 15 is a side elevation showing a further detail of the tape feed;

Fig. 16 is a further detail front view;

Fig. 17 is a plan view of the tape tension;

Fig. 18 is a front view of the variable tape feeding mechanism;

Fig. 19 is a top view;

Fig. 20 is an end view of a double pawl controlling mechanism in neutral position;

Fig. 21 is an end view in acting position,

Fig. 22 is an end view of the tripping mechanism;

Fig. 23 is a front view of Fig. 21;

Figs. 24 and 25 are top views of details;

Fig. 26 is a plan view on an enlarged scale showing the blank and jaw members at different stages;

Figs. 27, 28 and 29, show various forms of stringers produced by different settings of the machine.

1 represents a metal blank, which may be in the form of a flat strip, which is fed into the machine from the rear toward the front. The machine is applicable to separate blanks as well as to a continuous strip, but in making very small fasteners such as herein shown, which may be as small as one-eighth inch long and one-sixteenth inch wide when fastened and applied to the tape, it is preferable to employ a strip. Referring to Figs. 1 and 4, the blank 1 enters guide 2 and

passes through feed rolls 3, 3, then through guide 9 to the die unit 10, and between the side guide plates 11, (see Figs. 3 and 10). The guide plates 11 are controlled by wedges 12 (see Figs. 3 and 10). The wedges 12 are operated through a slide 13 (see Figs. 3 and 4), and cam plates 14 by the punch head 15, held in the slide 16 (see Figs. 11 and 12) and moved up and down through connecting rod 17 and crank 18 on the main shaft 8. The feed rolls 3, 3 are operated by ratchet 4, pawl 5 and connecting rod 6 from eccentric 7 mounted on the main shaft 8 (see Figs. 1 and 2).

22 is the blanking punch which punches out the entire member and the piece 34 into die 23 (see Figs. 3 and 4). As the punch 22 draws out of the die, the plunger 24 carried by plunger holder 25 and sleeve 26, is actuated by spring 27 to press the punchings back into original place in the metal blank 1. The piece 34 (Fig. 26) lies in the blank between the jaws 35 of the punching. This scrap piece 34 is pushed out of the blank 1 by punch 36 (see Fig. 4) into the hole 37 in die unit 10. The next step is to press or form the punching in its final form ready to be clamped on the tape, and this is effected by punch 38 and recess 39 in die unit 10 (Figs. 4 and 5).

On the down stroke of head 15, as the punches are nearing the blank, the cam plates 14 (see Fig. 3) draw the wedges 12 toward the back, pressing the guide plates 11 toward each other with the blank in between, thus holding the blank firmly in place until released by the forward movement of the wedges 12 on the up stroke of head 15. Figs. 3 and 4 show the position at the moment the clamping movement of the guide plates 11 has been effected. To allow for wear and variation in the width of the blank, 1, the space between the guide plates 11 is adjustable by blocks 19 and set screws 20 (see Figs. 3 and 10).

The function of the guide plates 11 is of vital importance. At the time of punching, the two plates hold the material firmly against spreading and distortion either of the punching or of the blank. This enables the subsequent operations on the punching to be controlled through the blank, and ensures such perfect shape of the finished punchings and correct positioning thereof in the dies, as to produce a highly uniform and symmetrical fastener member and product. When the guide plates 11 draw tight around the blank 1, they not only bring the blank into a central position over the dies, but force the punchings, if they should happen to get out of place, into correct position lengthwise of the blank. The guide plates spread apart during the feed and allow an easy and free movement of the blank. It also allows the interlocking or projecting

end of the fastener punching to lift up out of the recess 39 (see Fig. 4) in die unit 10 after the impression of punch 38.

At this time the blank strip 1, after reaching die unit 10, is confined between die unit 10 on the bottom and stripper plate 21 on the top (see Fig. 10.)

In order to avoid reliance solely upon spring 27 to press the punching back into its original place in the blank as punch 22 withdraws, a positive movement is provided. Rod 28 in addition to spring 27 exerts pressure on sleeve 26 thus forcing the punching into its place in the blank. Rod 28 is acted upon through screw 29 in lever 30 (see Figs. 11 and 12) and connecting links 31, 32 from eccentric 33 on main shaft 8. Upon the return of the punching to its proper place in the blank and with the co-operation of the side guides, 11, top of die unit 10 and stripper plate 21, the punching can now be fed forward by the blank feed rolls 3, 3, without any danger of becoming displaced. A displacement at this time would cause much trouble because of the extreme accuracy required in finished fastener members of such small dimensions.

The blank after return of the punching is fed forward as above stated so that the scrap piece 34 can be pushed out of the blank 1 by punch 36, and then the punching is pressed into recess 39 in die unit 10 by punch 38 to form the interlocking recess and projection. At this time, it is necessary to hold the blank and punching down onto the face of the die unit 10 and also to hold it against lateral spreading by contraction of the side guides 11. The stripper plate 21 partly performs this function, but in addition there is provided a yielding presser or floater 40 (see Figs. 5, 6, 8) which is mounted in stripper plate 21 and bears down on the jaws 35 of the punching, and on the blank 1, by means of springs 41 (see Fig. 4) and plunger 42. This plunger 42 is timed and adjusted to commence pressure as soon as the forward movement of the blank stops, and can be adjusted to exert a positive pressure upon the blank and punching by contacting with a lug on punch block 15 when the punches are in their lowest position. Thus the blank and punching are firmly held in position while the transversely elongated recess and projection are formed by the punch 38 and die recess 39.

When the blank 1, still carrying the fastener member, which is now finished and ready to be pressed on the tape, is again fed forward, the floater or presser 40 yields upwardly so as to permit the projection of the fastener member to lift out of the die recess 39 so that it can be carried forward into recess 43 (Figs. 3 and 4) ready to be set. To prevent the fastener member punching from lifting out of the blank 1 altogether, the

lift of the yielding presser 40 is limited as shown in Fig. 9. Figs. 6 and 7 show the presser 40 at its lowest position and Figs. 8 and 9 show it at its highest position.

5 The finished punching is now carried forward by the next motions of the feed rolls 3, 3 until it reaches the position where the jaws 35 straddle the corded edge of the tape 44 (see Fig. 26). The tape 44 is fed intermittently upwards and at right angles to the blank feed through the hole and slot 45 (see Figs. 3 and 4) in die unit 10. In this position, the jaws 35 are clamped around the corded edge of the tape by side tools 46 (see 10 Figs. 3 and 26) which simultaneously press toward each other on the outside of the blank 1, while the formed jaw member is being held between the top of the die unit 10 and the resilient presser 40 (see Figs. 3 15 and 4). The side tools 46 which set the jaw members on the carrier element, tape or stringer, are held in the slides 47, which are connected at 48 to lever 49, rock shaft 50, arm 51, and link 52 to punch block 15 (see Fig. 25 2). When the clamping movement is completed, the tape feeds up and lifts the jaw member clamped to its corded edge, out of the residue of the blank, 1, the tape and attached jaw member passing through slot 53 30 in floater 40 (see Fig. 5). There now remains of the blank 1 only the two edges, which are fed through the tubes 54 (see Figs. 3 and 4) and cut into small pieces by knives 55 connected to the actuating heads 35 48 of the side tools, the pieces falling down through chute 56.

In order to prevent slipping of the feed, the blank 1 is maintained clean and dry while engaged by the feed rolls 3, 3, and the necessary lubrication of the blank is done after it has passed the feed. This is accomplished by an ordinary oil pump 57 (see Fig. 1) which drips the lubricant down in tube 58 mounted centrally over the blank 1. Soap and water is preferably 45 used as a lubricant, because it does not leave a stain on a fabric tape.

The tape is wound on spool 59, and leads through guide 60, then up through floating tension 61, through hole 45 in die unit 10, then through hole 62 in the punch holder, then around feed roll 63 having a knurled surface for the tape and a groove 64 for the jaw members, then the tape leads to winding 55 spool 65 driven by belt 66 from the main shaft. The groove 64 serves as a leader and prevents lateral displacement of the tape in passing around feed roll 63. The grip is also assisted by the roughened surface in conjunction with tension 61. 60

The tension 61, shown in Fig. 17, comprises two tension plates 67 having guiding grooves for the cord, and mounted loosely on the ends of levers 68 which are pivotally 65 connected at 69 and normally pressed

apart by spring 70 mounted between screw bushings 71, which can be turned so as to vary the spring pressure at plates 67. The pressure of the jaws is transmitted through screw 72 located at about the center of plates 70 67, so that the plates can rock slightly on the ends of the screws and adjust themselves to irregularities in the tape without varying the friction. In order to prevent puckering the plates 67 at the entering side are tapered so as to smooth out the tape before it reaches the setting point of the jaw members. It will thus be seen that the tape is positively controlled by the feed roll 63, and the varying control of roll 63 for 80 varying the spacing between jaw members on a single fastener stringer, and the blank spacing between successive stringers will now be described.

Another part of the mechanism when put 85 into operation automatically produces an auxiliary movement of the tape roll by which the regular spacing between the interlocking members is alternately increased and decreased in any desired portion of a 90 group of members or stringer, thereby producing in one group an increased spacing corresponding with the decrease in spacing between members in a following group. Two of these alternating groups form a fastener which will, by reason of the difference 95 in spacing, take a curve with the larger spacings on the outside and the smaller spacings on the inside. The increase or decrease in the tape feed added to or taken 100 off from the regular feed is uniform so that the spacing between the members within the portion of increase or decrease remains constant. As a consequence the curve of the fastener is circular in form of a 105 radius proportionate with the difference between spacing of the members on the out and inside stringer. The mechanism is adjustable to make any desired length of curve within its limits. 110

With this feeding mechanism it is optional to make either straight or curved or a combination of straight and curved fasteners in predetermined lengths. The length of a fastener is determined by the 115 number of interlocking members on the tape grouped together between the blank spaces. When the mechanism is set for producing straight fasteners the spacing between the members in a group is constant. 120

For each two stringers the mechanism for increasing and decreasing the regular spacing makes one reciprocating trip thus making one complete curve to each fastener only. But as the timing of the mechanism in its 125 relation to the blank spacing between the stringers is adjustable the setting can be made to produce the blank space which divides the stringer in center of a curve or any other part of the curve. It follows that 130

if part of the curve for which the mechanism is set forms the end of one stringer and the other part of the same curve forms the beginning of another stringer a fastener which in effect has two curves, one curving in the opposite direction to the other is produced.

Tape feed roll 63 is rotatably mounted on shaft 75 and is driven thereby through a clutch member later to be described. Keyed to shaft 75 is a ratchet wheel 76, and rotatably mounted on shaft 75 is a bell crank 201, the latter carrying pawl 120 pivotally mounted on one arm thereof, and having its other arm pivoted to and oscillated by connecting rod 17'. Pivoted to the other end of connecting rod 17' is crank pin 138' in crank plate 21', the latter being keyed to shaft 8. Crank pin 138' is carried by a block clamped or otherwise adjustably secured in a radial slot in crank plate 21', and by varying the radius of crank pin 138' the throw of pawl 120 may be adjusted as desired. Spring 202, between bell crank 201 and pawl 120 tends to maintain the latter in engagement with the teeth of ratchet 76. The actual throw of pawl 120 is very much greater than is required for the spacing of the fastener members, only a portion of the actual throw being used for this purpose, while the full throw is used to feed blank spaces. To secure the required effective throw for proper spacing, a shield 127 is provided over part of the arc of travel of pawl 120 to hold the latter out of engagement with the teeth of ratchet 76. Pawl 120 passes over shield 127 near the end of its throw, and spring 202 then draws it into engagement with the teeth of ratchet 76, giving the latter a motion of intermittent rotation. Shield 127 is angularly adjustable to provide for the feeding of any desired number of teeth. For the feeding of uniformly spaced fasteners for straight lengths, the movement of tape feed roll 63 is identical with that of shaft 75. To increase or diminish the space between the fasteners, and so provide for curved lengths, the motion of shaft 75 is modified by a clutch connection, later to be described, in transmitting such motion to tape feed roll 63.

The spacing control obtained by variable movement of feed roll 63 through pawl and ratchet tripping and differential driving means is shown in Figures 18-25. Referring to Figure 18, ratchet 76 acted upon by pawl 120 is keyed to the shaft 75 which carries splined sleeve 77. This sleeve 77 has a spiral clutch connection 78 with the longitudinally fixed sleeve shaft 79 carrying feed roll 63. 80 is a friction brake. The sleeve 77 revolves within and moves longitudinally with drum 81 threaded on to the longitudinally stationary extension of

bearing 82, so that by rotary motion of drum 81 the sleeve 77 is moved axially. For regular spacing the drum 81 is stationary and the intermittent uniform movement of ratchet 76 is imparted through shaft 75, sleeve 77, sleeve shaft 79 onto the tape roll 63. To increase or decrease the regular intermittent rotary motion of roll 63, the drum 81 is revolved intermittently corresponding therewith and moves the sleeve 77 axially in one or the other direction, thereby, through the spiral clutch 78, adding to or subtracting from the uniform movement imparted by ratchet 76. The drum 81, Figures 20 and 21, is revolved by double pawl 83 pivoted at 84 on rocker arm 85. The latter is connected by pin 86 to cross head 87 and reciprocates, fixed in its vertical plane, between the positions A and B. The back of pawl 83 has three notches, one central which by reason of a good fit with the pointed end of plunger 88 serves to hold the pawl in neutral position, as illustrated in Figure 20, and one at each end to position the spring pressure of plunger 88 to hold the pawl in one or the other of the actuating positions. If the double pawl 83 is in actuating position on one side the feed roll 63 will be accelerated relatively to ratchet 76 through the spiral clutch 78, and if in the other actuating position the feed roll will be retarded, while if the pawl is in neutral position, as shown in Figure 20, the drum 81 is at a standstill and tape roll 63 is acted upon only by the drive through ratchet 76.

The position of the plunger 88 relative to the three notches on the back of pawl 83 is controlled by screws 89 on plunger rod 90 and screw 91 on plunger rod 92, (see Figs. 20, 21, 22, 23) on one hand and by pin 93 on ring 94 and pin 95 on ring 96, (see Figs. 19, 20 and 21) on the other. The screws 89 and 91 act on the spring plunger 88 to move it out of neutral position into one or the other actuating positions, in other words control the starting of the increased or decreased spacing of the fastener members, whereas the stopping is controlled by the pins 93 and 95. The rings 94 and 96 (see Fig. 19) are adjustably fastened to, as by set screws (not shown), and move with the drum 81 whose length of travel is determined by their positions. Revolved by the pawl 83, the drum carries the pin 93 on ring 94 in a screw thread line until the pin pushing on one branch of the double lever 97 (see Figs. 21 and 19) connected with the spring plunger 88 through shaft 98 and spring barrel 99 throws the spring plunger 88 into the neutral position on back of pawl 83. Figure 21 shows pin 93 about to act on double lever 97. The pin has been brought up into this position by the last upward stroke of rocker arm 85 and is now held by collar 103

(Fig. 19) acting as a brake on the drum 81 to which the ring 94 and pin 93 are fastened. The rocker arm 85 (Fig. 21) is on its downward stroke and plunger 88 will have moved into the neutral notch on back of pawl 83 when it reaches the end of the stroke at position B, thus stopping the movement of the drum 81. The pawl now remains neutral and the drum idle until the spring plunger 88 acted upon by screw 89 on plunger rod 90 (see Fig. 20) throws the pawl 83 into actuating position and starts the drum in the opposite direction to continue until pin 95 on ring 96 (see Fig. 19) arrests the motion by bringing pawl 83 into neutral position through pressure on the other branch of double lever 97. The duration of increased or decreased spacing, in other words the length of a curve in the fastener, is thus controlled by the position of rings 94 and 96 on the drum 81. The collar 103 (see Fig. 18) mounted slidably in a slot of drum 81 has a brake lining 112 which serves to hold the drum against the back stroke of the pawl 83 and pressure on pins 93 and 95 required to throw spring plunger 88 into neutral position as well as to prevent accidental rotary movements.

To start the drum 81 the pawl 83 is thrown from neutral into actuating position by one or the other of screws 89, 91 on plunger rods 90, 92 (see Figs. 23, 24 and 25). The latter slide in bearing 82 and are connected by lever 100 pivoted at 101 on bearing 82. When screw 91 is in central position at E (Fig. 23) the screw 89 is in central position at H. The positions at F and G of screw 89 correspond with positions C and D of screw 91, respectively. Only one of the said screws can be in actuating position at once. To move pawl 83 out of neutral position screw 91 is brought to position C (see Fig. 23) directly above spring plunger 88, so that when rocker arm 85 moves into position A (see Fig. 21) the spring plunger is caused by screw 91 to throw pawl 83 into actuating position as shown in Fig. 21. To revolve drum 81 in the other direction, screw 89 is similarly brought to position G (Fig. 23) to move spring plunger 88 in the other direction as rocker arm 85 moves towards position B shown in Fig. 21. The timing of a period of increased or decreased spacing or in other words the position of a curve relative to the straight portions of a fastener and the blank spaces between the groups of members is thus controlled by the positions of screws 89 and 91 on the plunger rods 90 and 92.

The movement of the plunger rods 90 and 92 carrying the screws 89 and 91 is controlled by the axial movement of drum 81 through collar 103, rod 104, lever 105, pronged slide 114, and spring 102, (Figs. 18-19) on one hand and catch 106, dog 107

and trip 108 on the other, (Figs. 22-23). Catch 106 fits slot 109 in plunger 90 and is solidly connected with dog 107 through shaft 110. Actuated by spring 111 (Fig. 22) the catch 106 is constantly pressing against the plunger rod 90 and when this rod in its travel back and forth brings the slot 109 in line with the catch 106 (Fig. 23) the latter snaps in and locks the plunger rods and screws 91 and 89 in their respective positions E and H. The release of rod 90 is accomplished by the trip 108 (Figs. 22-23) slidably secured to friction ratchet 119. This ratchet makes one revolution for each group of interlocking members or for each stringer. Once in each revolution the trip 108 lifts the catch 106 out of the slot 109 in rod 90 and releases the rods 90 and 92 for longitudinal movements. Referring to Fig. 19 the rod 104, dovetailed to collar 103 in the slot of drum 81, travels back and forth with the axial movement of the drum and through its connection oscillates the forked end of the lever 105 pivoted at 113 as shown in Fig. 25. Guided in a slot in the bearing 82 and interlocked with the forked end of lever 105 is the slide 114, see Figs. 22 and 23, having two prongs 115 and 116 extending upwards into a slot in plunger rod 92, (Fig. 23). The two prongs embrace a compression spring 102 lodged within the plunger 92 (Fig. 24). Moved by the lever 105 the prongs on slide 114 oscillate with the movement of the drum 81 and press the spring 102 against the plunger rod 92 at point 117 when moved in one direction and at point 118 when moved in the other (Fig. 25).

Friction ratchet 119 determines the length of a stringer by timing the increased feed of tape to produce a blank space which separates one group of members from another.

The driving pawl 120 for ratchet 76 automatically feeds ratchet 76, the excess length of tape required for this purpose, through a second pawl 122 (Figs. 15 and 16) pivoted on pin 123 and held against pin 124 by spring 125. Pawl 122 is mounted on the friction ratchet 119, and extends over the teeth of ratchet 76. The friction ratchet 119 is rotatably mounted on shaft 75 (Figures 13 and 14) between ratchet 76 and shield 127, and is held against accidental rotary movement by brake 128 (Fig. 16). As the secondary pawl 122 is carried around on the friction ratchet 119, it reaches the position where pawl 120 at the rear end of its stroke rides over it. At the beginning of the forward movement pawl 120 then catches the secondary pawl 122. The spring 125 (Fig. 15) yields to the pressure of pawl 120 allowing the secondary pawl 122 to swing until its forward edge engages the teeth of ratchet 76. The swinging movement being arrested, continued pressure of

pawl 120 carries with it the secondary pawl 122, the two ratchets 119 and 76, the shaft 75 and the tape. The ratchet 119 is moved by ring 130 (Fig. 15) through rolls 131 and springs 132. Arm 133 which operates ring 130 is operated by the spring 134 and connecting rod 6 through pin 135 in clamp 136 fastened to connecting rod 6. Eccentric 7 is operated by shaft 8 and carries the connecting rod 6. The stroke of arm 133 is adjustable by the micrometer head 137 in bracket 138 (Fig. 15) attached to the frame of the machine. The adjustment ranges from a maximum length equal to the throw of connecting rod 6 to a very small minimum. Thus the secondary pawl 122, carried around by the friction ratchet 119, is made to complete a single revolution during a predetermined number of operations of the machine according to the setting of micrometer 137, and in this way determines the length of the fastener. When the secondary pawl 122 is effective, it will be seen that a long throw will be given the tape feed, equal to the full stroke of pawl 120.

The trip 108 slidably mounted on the friction ratchet 119 which carries the secondary pawl 122 is adjustable to any position on the ratchet so as to release plunger rods 90 and 92 for action to start the increase or decrease in the spacing at any point of a stringer. This trip 108 starts one curve at a predetermined point in each stringer, but if set in a position relative to the pawl 122, so as to start the curve near the end of one stringer and the curve continues on the next, a fastener made up of stringers as shown in Fig. 29, having one curve at each end will be produced.

When pin 93 on ring 94 stops the barrel 81 (Fig. 19) by moving the spring plunger 88 and pawl 83 (Figs. 20 and 21) into neutral, the rod 104, (Fig. 19) has moved with the drum and brought the lever 105 into a position illustrated in Fig. 25, where the position of prong 115 on slide 114 held by the lever exerts pressure on plunger rod 92 at point 117. The plunger rod 92 by reason of its connection through lever 100 with plunger rod 90 is held by catch 106 in slot 109 (Fig. 23) and screws 89 and 91 locked in their respective positions H and E. The rocker arm 85 is brought to idling up and down between A and B (Fig. 21). The sleeve 77 is held axially by the idle drum 81 and revolving intermittently with the motion of shaft 79 transmits to tape roll 63 the movements of ratchet 76 and feeds the tape for regular spacing of a straight fastener. The friction ratchet 119 is travelling in accordance with the stroke of arm 133 (Fig. 15) and brings the trip 108 (Fig. 22) in a clockwise direction up towards the trip 107. Continuing the movement of the trip 107 catch 106 is lifted out of the slot 109 and forced by the spring pressure at point 117 (Fig. 25) the plunger rods 92 and 90 (Fig. 23) are suddenly thrown into new positions and bring screws 89 and 91 from their neutral positions at H and E into positions G and D respectively (Fig. 23). Screw 89 is now directly in line with spring plunger 88 and forces it out of neutral position shown in Fig. 20, upwards, as the rocker arm moves down from position A into position B (Fig. 21) and brings pawl 83 into actuating position. The drum 81 now commences its intermittent rotary movement in an anticlockwise direction and guided by the left threads on bearing extension 82 (Fig. 18) moves axially towards the tape feed roll. Sleeve 77 now transmits to the tape feed roll 63 for each revolution of the machine the regular forward movement of pawl 76 as well as a regular slight backward movement as the clutch end of sleeve 77 moves longitudinally into the clutch end of sleeve shaft 79 (Fig. 18) producing as a result a shortened forward movement of the tape feed roll 63 or a decreased spacing between the members going onto the tape. As the drum 81 continues its axial movement the lever 105 releases the spring pressure at point 117, (Fig. 25) and gradually exerts pressure in the opposite direction through prong 116 at point 118. Free to move, the rods 90 and 92 yield to the spring pressure and move the screws 89 and 91 back from the positions G and D towards H and E, (Fig. 23). When reached, the catch 106 which has meanwhile been passed by the trip 108 and now controlled by spring 111 snaps into the slot 109 and locks the screws 89 and 91 in the H and E positions. The lever 105 continues to move with the drum and prong 116 (Fig. 25) is now compressing spring 102 against point 118 in rod 92 which is now locked. The movement of the drum 81 continues until pin 95 on ring 96 comes in contact with the double lever 97, and brings pawl 88 into neutral, stopping the drum and the backward movement imparted to feed roll 63 by the axial movement of sleeve 77, thus reverting the tape feed roll 63 to the regular forward movement of ratchet 76 and spacing of the members for a straight fastener. The trip 108 has meanwhile completed a round with the friction ratchet 119 and again lifts the catch 106. The pressure of spring 102 now directed at point 118 (Fig. 25) snaps the screw 91 on rod 92 (Fig. 23) into actuating position at C and starts the drum in the opposite direction. Sleeve 77 is now moving away from tape feed roll 63 and thereby transmits a slight forward movement to the tape roll, in addition to the regular movement by the ratchet 76, and the machine is thus producing a stringer with increased spacing between the members until

the drum is again stopped by pin 93. The secondary pawl 122, which in connection with pawl 120 and ratchet 76, acts upon the tape feed roll 63 to effect the blank space of tape dividing one stringer from another, travels with the friction ratchet 119 at the same rate of speed as the trip 108. The latter is adjustable on the friction ratchet to any position in relation to pawl 123, and when set, repeatedly sets the drum 81 into motion at the predetermined time relative to the action of pawl 123, in other words, places the curve in any desired position in relation to the ends of the fastener. Fig. 29 illustrates a stringer where the action of pawl 122 on the tape roll has taken place while drum 81 was in motion and half ways between the rings 94 and 96, and in this way places, half of one curve at the beginning and half of the other curve at the end of the same fastener.

In order to produce curved fasteners without any straight portions the travel of the friction ratchet 119 is timed by micrometer head 137 (Fig. 15) to correspond with the length of travel of the drum as regulated by the positions of rings 94 and 96, so that trip 108 on the friction ratchet starts the drum off on a reciprocating trip immediately it is brought to rest by either one of the rings. If the pawl 122 acts and produces the blank space simultaneously with this stopping and starting of the drum, that is, groups the members of increased spacing on one stringer and members of decreased spacing on the next, a circular fastener results, whereas if the blank space groups members of increased spacing followed by members of decreased spacing in succession on the same stringer an S shaped fastener will be the outcome.

The radius of the curve is fixed either by the teeth on drum 81, or by the pitch of the threads on bearing 82 and drum 81, or by the pitch of the spiral cam clutch 78. The length of the curve varies with the travel of drum 81 as regulated by the distance between rings 94, 96. The drum should be stopped before trip 108 has made a complete revolution. The acceleration and retard can be timed to occur at any point of the stringer, thereby permitting S shaped stringers such as shown in Fig. 29 to be made.

For making straight fasteners with uniform spacing, the trip 108 is removed from friction ratchet 119, so that the double pawl 83 remains in neutral position after having been once brought there by pins 93 or 95 on rings 94 or 96. The variable spacing mechanism is thus rendered entirely inoperative as long as desired.

Figure 27 shows the strip for straight closure wherein the spacing is uniform while Figure 28 shows the strip for curved clo-

sure wherein, the spacing is varied, the spacing of the curved portion 140 of one group forming the outside or convex portion of a curve is the greatest and the spacing of the curved portion 142 of the group forming the inside or concave portion of a curve is the least, varying from the normal or standard interlocking spacing of the straight portion 141 to permit a free and proper action of the fasteners when applied to curved closures. The terms "convex" and "concave" are used with reference to the respective positions occupied by the tape in relation to the mean line of the closure, i. e. the curve defined by the engaging portions of the fasteners. In assembling, the strip is cut as indicated by the dotted lines in Figs. 28 and 29, and a convex portion is fitted to a concave portion, either of which portions being first inverted.

If not much variation in the lengths of fasteners is required, the friction ratchet with secondary pawl 122 can be dispensed with. In this case the ratchet 76 is provided with a high tooth 139 (see Figure 13) which will project up above the surface of shield 127 so as to be caught by pawl 120 during each revolution of ratchet 121. By changing the throw of pawl 120 by adjusting clamp 138', the length of the metal part of the fastener can be varied to a limited extent without changing the over-all length including the tape ends. To materially change the length of the fastener the number of teeth in the ratchet 76 can be varied, and also the diameter of feed roll 63.

The normal spacing may be varied independently of clutch cam 78 and the variable feed mechanism, either by varying the throw of pawl 122 through the adjustment of crank pin 138' in the slot in crank plate 21', or by angularly adjusting shield 127 to render available a greater or less portion of the total throw of pawl 122. Thus the normal straight spacing may be made either greater or less, and as the effect of the variable feed mechanism is superposed upon that due to pawl 122, the resultant rotation may be made greater or less, permitting the fasteners to be spaced for a curve of any desired radius.

The broad principles of the invention can be carried out otherwise than as herein specifically shown, and the invention is not to be limited except as required by the scope of the appended claims.

What is claimed, is:

1. The method of making fasteners adapted to a curved closure consisting in affixing jaw members in spaced groups on a continuous stringer in predetermined number while increasing the spacing of the members of one group and decreasing the spacing of the members of a succeeding group, and cutting such continuous stringer so that said

groups may respectively conform to the respective sides of the closure and interlock with each other in a line following the mean curve of the closure.

2. The combination with means for affixing groups of jaw members to a strip, of means for varying the spacing between members at a predetermined part of a group.

3. The combination with means for affixing complementary groups of fastener members to a strip with predetermined spacing, of means for varying the spacing at the intermediate portion of the group.

4. The combination with means for affixing complementary groups of members to a strip with predetermined spacing, of means for increasing the spacing at one portion of one group and decreasing the spacing at a corresponding portion of another group.

5. The combination with means for feeding a strip and means for affixing jaw members on the edge thereof, of means for varying the spacing of the members on predetermined portions of the strip to produce portions of complementary spacing adapted to form inner and outer members of a curved fastener.

6. The combination with means for feeding a strip and means for affixing jaw members on the edge thereof, of means comprising a feed driven with a predetermined variation of movement relatively to a standard to vary the spacing of the members at a portion of the strip.

7. The combination with means for feeding a strip and means for affixing members spaced for curvilinear interlocking on the edge of said strip, of a strip feed having actuating means for effecting normal interlocking spacing of said members, means for effecting an increased strip feed after affixing a predetermined number of members, and means for varying the normal spacing of members on a predetermined portion of said strip for a predetermined curve.

8. In a fastener making machine, the combination with a feed roll, of means for intermittently rotating said roll, means supplemental to first said means for adding to or subtracting from each impulse thereof a supplemental rotation, and automatic means for starting and stopping the operation of said supplemental means at predetermined times in relation to first said means.

9. The combination with an intermittently driven feed roll, of a differential driving connection between said feed roll and its driving means, and means for controlling said differential driving connection to effect a constant, increased or decreased feed.

10. The combination with a roll for intermittently feeding a strip, of an actuating ratchet, a differential driving connection between said ratchet and said feed roll, and means for controlling said differential driv-

ing connection to effect a constant, increased or decreased feed.

11. In a fastener making machine, the combination with a feed roll, of intermittently rotating actuating means, a coupling between said actuating means and said roll, a cam in said coupling for adding to or subtracting from each impulse of said actuating means a supplemental rotation, actuating means for said cam, and automatic means for starting and stopping the operation of said cam actuating means at predetermined times in relation to said intermittently rotating actuating means.

12. The combination with means for intermittently feeding a strip, of actuating means comprising a ratchet and a differential driving connection, a pawl for rotating the ratchet, means for periodically giving the ratchet an increased throw, and means controlling said differential driving connection to permit increased or decreased movement of said feeding means relatively to the normal movement of said ratchet.

13. The combination with means for intermittently feeding a strip, of actuating means comprising a ratchet and a differential driving connection, means for adjusting the normal throw of the ratchet, a pawl for rotating the ratchet, means for periodically giving the ratchet an increased throw, and means controlling said differential driving connection to permit increased or decreased movement of said feeding means relatively to the normal movement of said ratchet.

14. The combination with an intermittently driven feed roll, of a spiral cam driving connection, and means for controlling said cam connection to advance or retard the roll relatively to its normal feed.

15. The combination with an intermittently driven feed roll, of a spiral cam driving connection, and means for automatically controlling said cam connection to advance or retard the roll relatively to its normal feed.

16. The combination with an intermittently driven feed roll, of a spiral cam driving connection, and means, comprising a traveling drum, for controlling said cam connection to advance or retard the roll relatively to its normal feed.

17. The combination with an intermittently driven feed roll, of means for actuating said roll to give a normal feed, a lost motion connection comprising a spiral cam between said actuating means and the roll, and means for variably controlling the lost motion.

18. The combination with an intermittently driven feed roll, of means for actuating said roll to give a normal feed, a lost motion connection comprising a spiral cam between said actuating means and the roll,

and means, comprising a double pawl, for variably controlling the lost motion.

19. The combination with means for feeding a strip and means for affixing groups of interlocking fastening members thereto, of a strip feed having actuating means for effecting normal interlocking spacing of said members, and means for varying the normal interlocking spacing of said members on a predetermined portion of the strip to permit of interlocking on a predetermined curve.

20. In a fastener making machine, the combination with a feed roll, of means for intermittently rotating said roll, means supplemental to first said means for adding to or subtracting from each impulse thereof a supplemental rotation, control means for said supplemental means, and means for varying the amount of the resultant rotation.

21. In a fastener making machine, the combination with a feed roll, of intermittently rotating actuating means, a coupling between said actuating means and said roll, a cam in said coupling for adding to or subtracting from each impulse of said actuating means a supplemental rotation, actuating means for said cam, control means for said cam actuating means, and means for varying the amount of the resultant rotation.

Signed at Meadville, in the county of Crawford and State of Pennsylvania, this 12th day of October A. D. 1918.

GIDEON SUNDBACK.

Witnesses:

C. I. CLANCEY,

I. W. LANG.



DEFENDANT'S EXHIBIT "BG"

G. Wintriss Patent No. 2,336,662

Filed June 5, 1941

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Dec. 14, 1943.

G. WINTRISS

2,336,662

APPARATUS FOR MAKING SLIDE FASTENERS

Filed June 5, 1941

4 Sheets—Sheet 1

Fig. 2

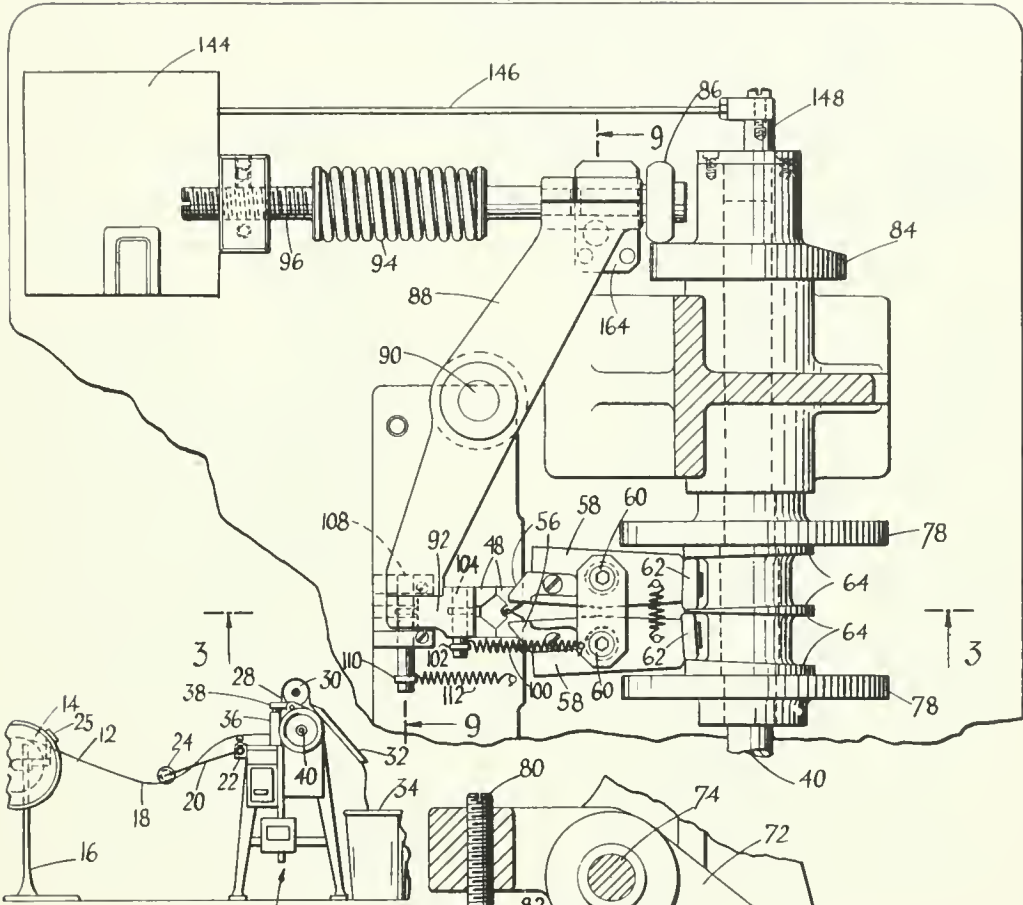


Fig. 1

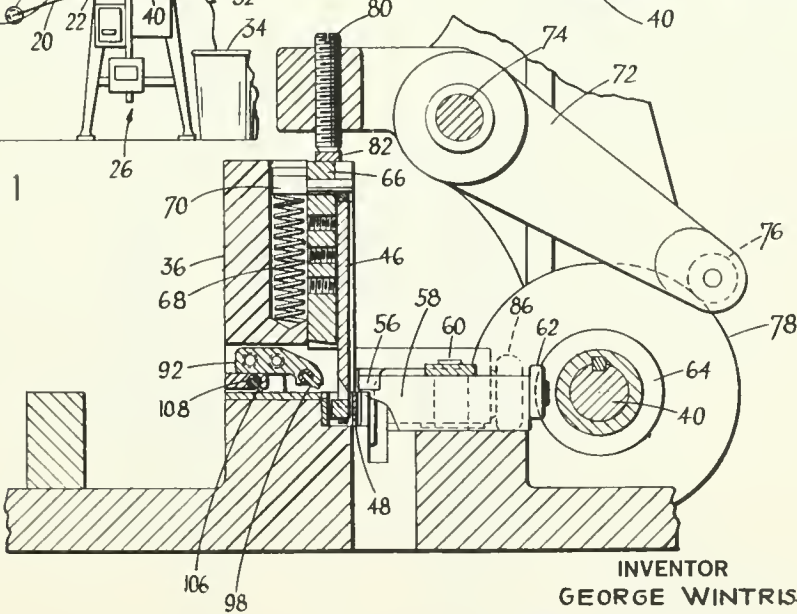


Fig. 3

INVENTOR
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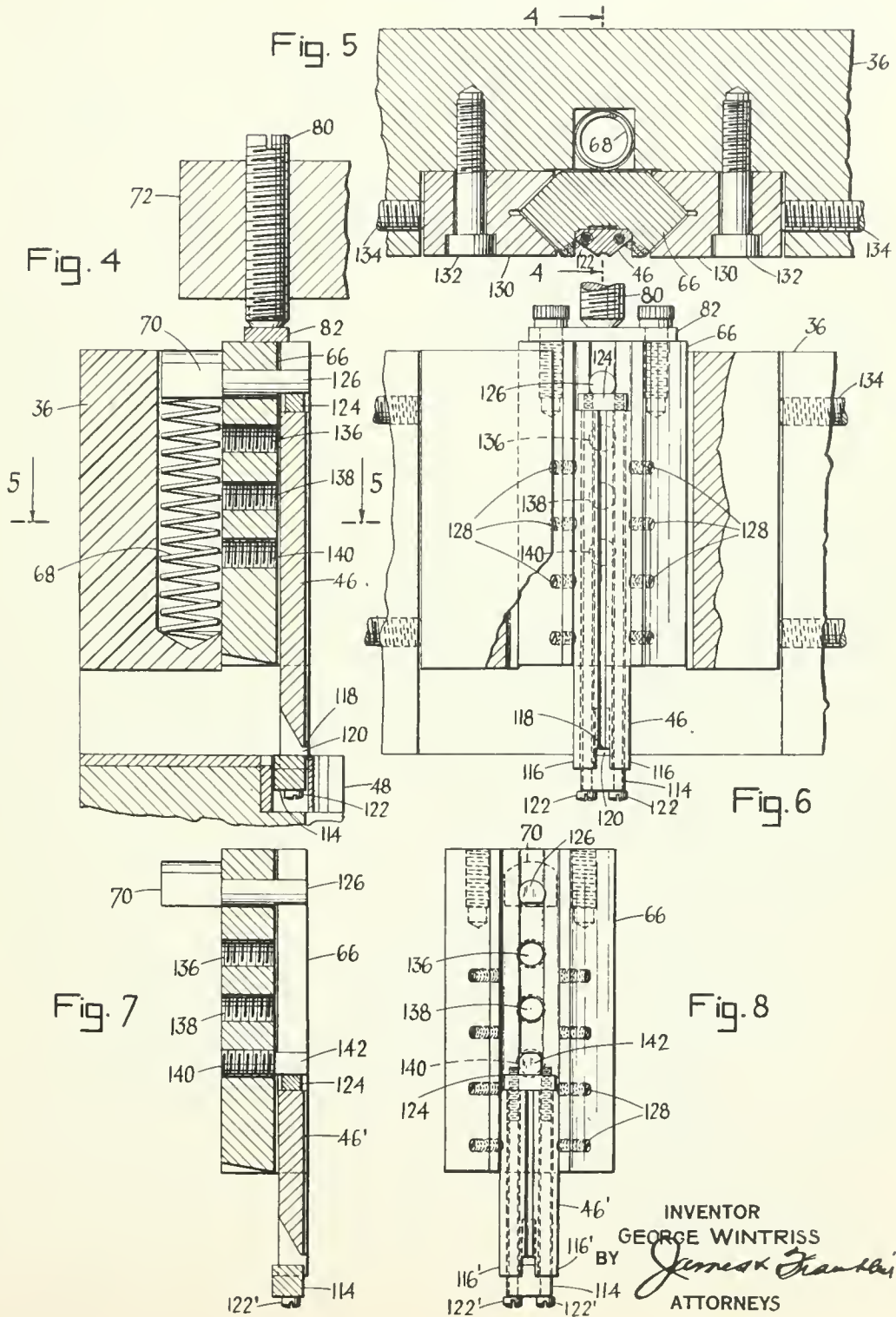
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APPARATUS FOR MAKING SLIDE FASTENERS

Filed June 5, 1941

4 Sheets-Sheet 2



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Dec. 14, 1943.

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2,336,662

APPARATUS FOR MAKING SLIDE FASTENERS

Filed June 5, 1941

4 Sheets—Sheet 3

Fig. 9

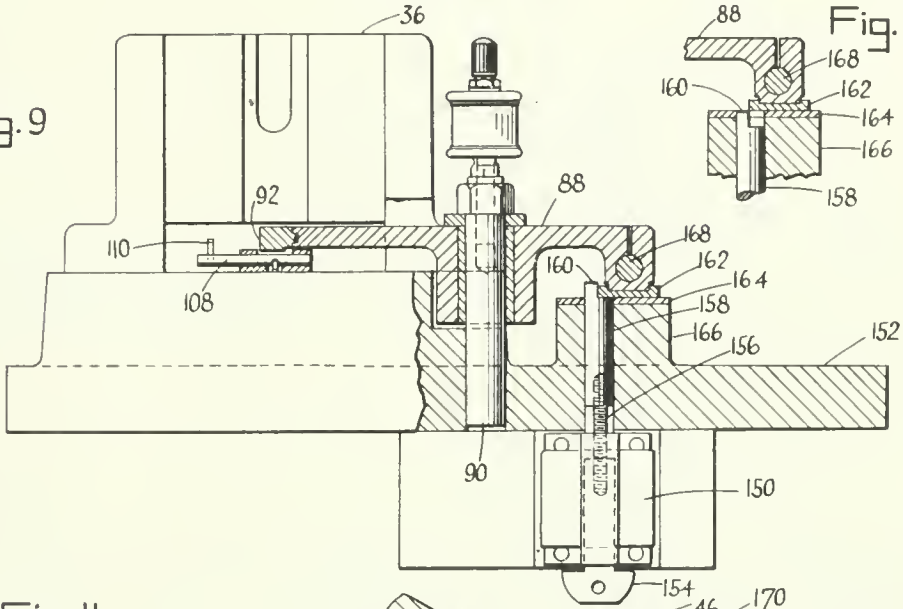


Fig. 10

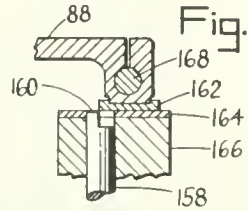


Fig. 11

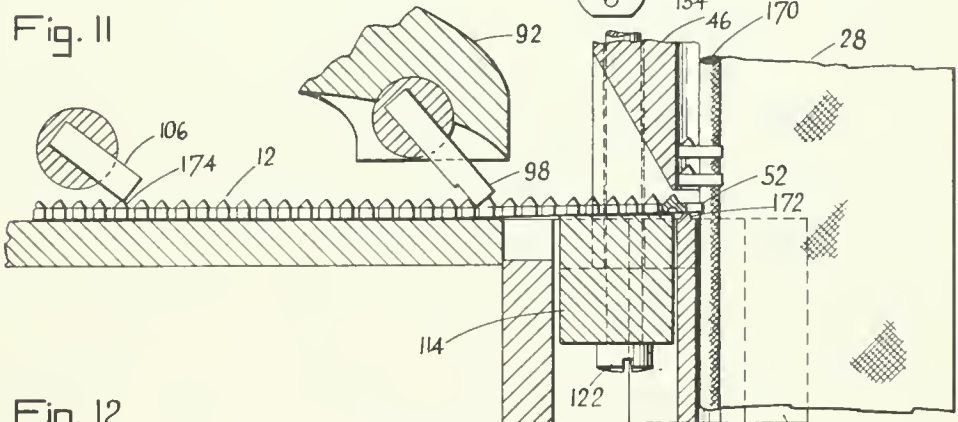
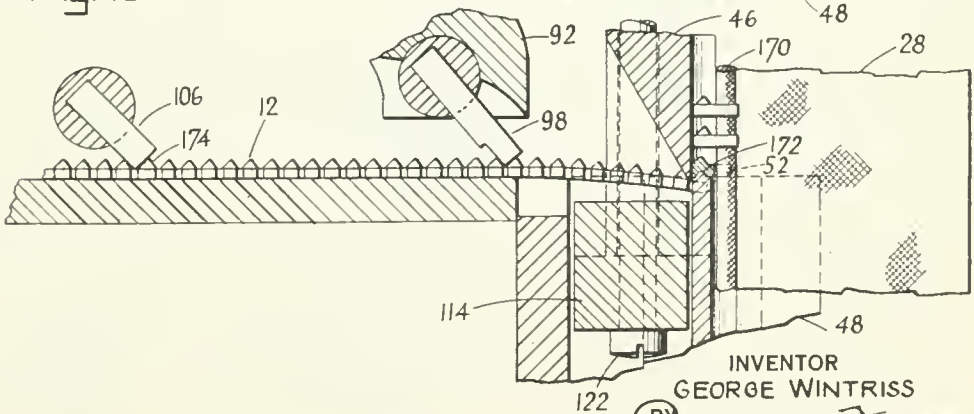


Fig. 12



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APPARATUS FOR MAKING SLIDE FASTENERS

Filed June 5, 1941

4 Sheets-Sheet 4

Fig. 13

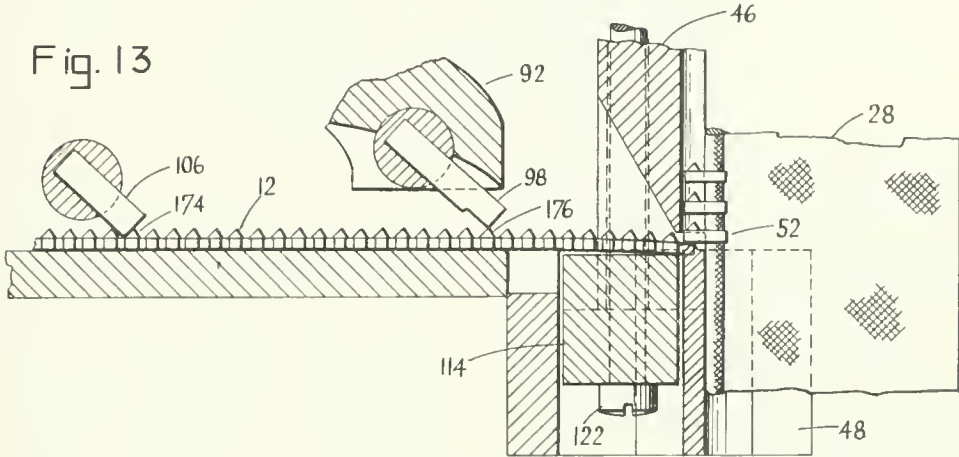


Fig. 14

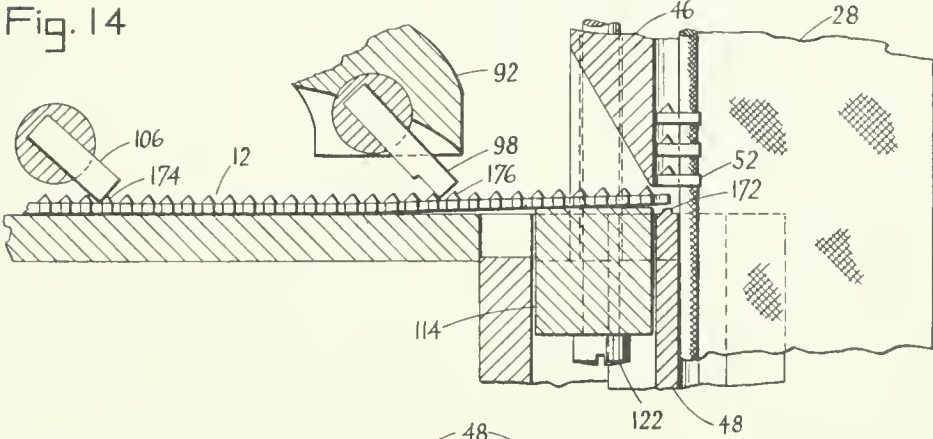


Fig. 15

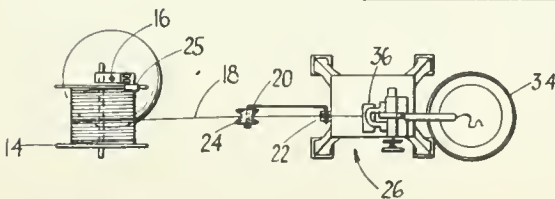
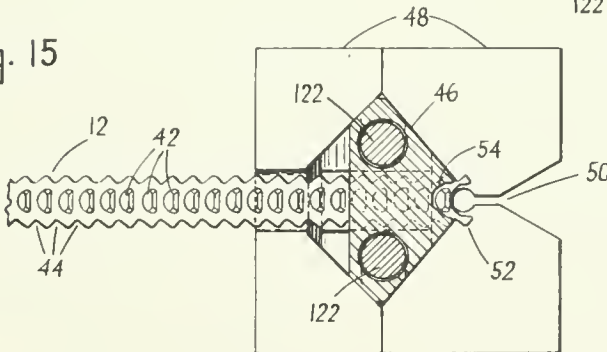


Fig. 16

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UNITED STATES PATENT OFFICE

2,336,662

APPARATUS FOR MAKING SLIDE FASTENERS

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Application June 5, 1941, Serial No. 396,661

14 Claims. (Cl. 164—88)

This invention relates to apparatus for making slide fasteners.

The primary object of the invention is to simplify the construction and to increase the operating speed, and to generally improve machines for severing and attaching fastener elements to a tape.

A more specific object is to eliminate the use of spring pads ordinarily forming a part of the die. This is done by providing the severing punch with a cross-bar at its lower end so that the punch when rising, will itself function to lift the strip of material to the desired elevation, preparatory to feeding the same through the die toward the tape. Still another object is to make it possible to grind or sharpen the punch throughout most of its working length, despite the provision of the aforesaid cross-bar at the bottom end of the punch. The elimination of the heavy spring pad contributes to reduced inertia and faster operation, and a further object of the invention is to appropriately and commensurately increase the operating speed of the feed means for the strip of embryo elements, this also being done, generally, by reducing inertia effects in the feed means. Another object is to simplify the structure of said feed means.

To the accomplishment of the foregoing general and other more specific objects, which will hereinafter appear, my invention consists in the apparatus elements and their relation one to the other, as hereinafter are more particularly described in the specification, and sought to be defined in the claims. The specification is accompanied by drawings in which:

Fig. 1 is a side elevation of apparatus embodying features of my invention;

Fig. 2 is a partially sectioned plan view of the same with the ram, ram housing, rocker arm, and tape feed mechanism removed;

Fig. 3 is a section taken in elevation approximately in the plane of the line 3—3 of Fig. 2;

Fig. 4 is a similar section through the punch and ram housing, drawn to enlarged scale, this section being taken approximately in the plane of the line 4—4 of Fig. 5;

Fig. 5 is a horizontal section taken approximately in the plane of the line 5—5 of Fig. 4;

Fig. 6 is a partially sectioned front elevation of the punch, looking in the direction from the cam shaft toward the ram and ram housing;

Fig. 7 is a section through the punch and ram, but showing the relation of the parts after long wear of the punch;

Fig. 8 is a side elevation of the punch and ram shown in Fig. 7;

Fig. 9 is a section through the feed lever and lock for the same, said section being taken approximately in the plane of the line 9—9 of Fig. 2;

Fig. 10 shows a part of Fig. 9, but with the feed lever unlocked;

Fig. 11 is a section taken in the same plane as Fig. 3, but showing the feed movement with the parts drawn to enlarged scale;

Fig. 12 is a similar view showing the cutting operation;

Fig. 13 is a similar view but showing the return movement of the parts;

Fig. 14 is a similar view, but illustrates the parts in their end position, preparatory to the next feed movement;

Fig. 15 is a horizontal section through the punch, and shows the strip of embryo fastener elements being operated on thereby; and

Fig. 16 is a plan view of the complete apparatus.

Referring to Figs. 1 and 15, the strip of embryo fastener elements 12 is unwound from a reel 14 supported on a suitable stand 16. The unwinding operation is preferably gravity controlled to provide a loop of slack 18, this loop being controlled by an arm 20 pivoted at 22 and carrying a rotatable, spool-like weight 24. The strip 18 is fed into an attaching machine generally designated 26, said machine comprising means to intermittently feed the strip 12 in a horizontal direction toward a vertically disposed tape 28, said tape being intermittently fed by a tape feed wheel 30. The tape with the fastener elements runs through a guide tube 32 into a basket 34. The vertically reciprocable punch which severs the individual elements from the strip is carried in a ram housing 36 and is actuated by a rocker arm 38. All of the parts of the machine are operated by a main cam shaft 40 driven by a motor. The cam shaft, motor, and tape feed mechanism, etc., need not be described in detail, as they are substantially the same as those described in my Patent No. 2,201,068, issued May 14, 1940, and entitled "Manufacture of slide fasteners," and in my Patent No. 2,302,084, issued November 17, 1942, and entitled "Manufacture of slide fasteners."

The reel 14 is restrained somewhat by an adjustable brake 25 carried by stand 16 and bearing constantly against the periphery of reel 14. The static friction of the brake is somewhat greater than the sliding friction when the reel is in motion. The gravitational pull of weight 24 on wire 18 is greater when the weight is in the

raised position shown in Fig. 1, than when it is lowered so that arm 20 is more nearly vertical. The consequent operation is that when loop 18 becomes short, as shown in Fig. 1, the weight 24 overcomes the static friction of brake 25, and the weight descends, producing a long loop of wire. When the weight can no longer overcome even the sliding friction, the reel stops, and weight 24 is again raised until it again overcomes the static friction of brake 25.

Referring now to Fig. 15, the strip 12 has a series of projections 42 on its upper face, and a series of recesses on its lower surface, these corresponding to the heads of the embryo fastener elements. The side edges of the strip are serrated as indicated at 44, the serrations corresponding to the ends of spread jaws, these being so widely spread as to receive the heads of the elements therebetween. The punch which operates on the strip 12 is shown in section at 46, and moves into a die 48. The said die is slotted at 50 to receive the beaded edge of the tape on which the fastener elements are to be secured. The endmost element which has just been severed from the strip is indicated at 52, the remainder of the strip being forced downwardly by punch 46, the effective cutting edge of which is indicated at 54, said edge outlining the head of the element. In Fig. 15, the element 52 is shown with the jaws still in spread condition, it being understood that the machine includes a pair of clamping jaws (shown at 56 in Figs. 2 and 3) which move sidewardly to close the jaws around the bead of the tape, thereby bringing the outer edges of the jaws into substantially parallel formation.

Referring to Figs. 2 and 3 of the drawings, it will be seen that the clamping jaws 56 are located immediately above the die 48. In Fig. 2, the punch has been removed from the die, and the ram and ram housing have also been removed. The tape and the element strip are also omitted. The clamping jaws 56 are carried on levers 58 pivoted at 60 and having cam rollers 62 received between cylindrical cams 64, said cams being carried by the main cam shaft 40 previously referred to.

Referring to Fig. 3, the punch 46 is secured in a ram 66 which is vertically reciprocable in ram housing 36. The ram is raised by a compression spring 68 bearing against a stud 70 projecting from ram 66. The ram is operated by a bifurcated rocker or ram lever 72 pivoted at 74, and carrying cam rollers 76 at its bifurcated lower end. The ram lever is preferably made of duralumin or equivalent light-weight metal. These cam rollers engage cams 78 which are mounted on cam shaft 40. The opposite end of the ram lever is provided with an adjusting screw 80 the lower end of which bears against a hardened wear plate 82 at the top of ram 66. The purpose of screw 80 is to readjust the position of the ram to compensate for wear when the lower end of punch 46 is ground or sharpened.

The feed means for the element strip (not shown) comprises a cam 84 (Fig. 2) working against a cam roller 86 mounted on one end of a feed lever 88, said lever being pivoted at 90 and carrying a feed dog 92 at its opposite end. The lever 88 is preferably made of duralumin or equivalent light-weight metal in order to minimize its inertia. A compression spring 94 holds cam roller 86 against cam 84. This spring may be adjusted by means of an adjusting screw 96. The feed dog 92 is rigidly secured on arm 88 without any intermediate slide or similar guide means to insure rectilinear motion, these parts

being omitted in order to minimize the mass of the reciprocating parts of the feed mechanism. Furthermore, the dog 92 is not pivoted for vertical movement, and instead is provided with a very small insert 98 (Fig. 3) which is pivoted on the main dog 92. This insert is normally urged downwardly into engagement with the element strip by means of a spring 100 (Fig. 2) connected to an arm 102 projecting upwardly from the spindle 104 in which insert 98 (Fig. 3) is carried.

The angular movement of the feed lever 88 is comparatively slight, and while the dog 92 is rigidly secured to the end of the feed lever, the resulting sideward movement of the feed dog and feed tooth is small enough to be accommodated by simply permitting such sideward movement. The feed tooth is made without side walls which would engage the sides of the element strip, and is made somewhat wider than the projections on the element strip so as to remain in engagement therewith during any such sideward movement.

The element strip is held against backward movement during return movement of the feed dog, by means of a check dog or strip lock 106 (Fig. 3), this comprising an insert carried by a spindle 108 which in turn has an upwardly extending arm 110 (Fig. 2) to which a pull spring 112 is connected.

The punch and ram construction is shown in greater detail in Figs. 4 through 8 of the drawings. The punch 46 carries a cross-bar 114 at its lower end, this cross-bar being secured to side extensions or heels 116 (Fig. 6) which extend below the cutting edge 118 of the punch. The cross-bar 114 closes the lower end of the punch, thereby forming a window or passage 120 through the punch, said passage being dimensioned to receive the element strip being operated on by the punch. As a result of this construction, the punch functions not only to shear the element strip downwardly away from the endmost element resting on the die 48 (Fig. 4), but also to thereafter lift or restore the element strip to initial position preparatory to feeding the next element (the new end of the strip) over the die 48.

The cross-bar 114 is preferably detachably secured to the punch in order not to interfere with grinding or sharpening of the punch when it has been dulled. The punch is preferably made of uniform cross-section throughout its length so that it may be resharpened many times, and much of its length usefully employed. With this same object in view, the cross-bar 114 is preferably secured to the punch by means of a pair of long, slender screws 122 which pass upwardly through holes running through the heels of the punch and extending upwardly throughout the entire length of the punch. The threaded upper ends of these screws are received in a block 124 mounted at the top of the punch and bearing against the end part 126 of the aforesaid stud 70. The stud 126 applies the operating force of ram 66 to the punch 46, although the punch is additionally secured to the ram by rows of set screws 128. The ram 66 is slidable in ways 130 (Fig. 5) which are themselves mounted on ram housing 36 by means of screws 132. These are received in over-sized holes, thus affording adjustment of the ways 130 under control of adjusting screws 134.

It has already been mentioned that the screw 80 (Fig. 4) on the rocker or ram lever 72, may be adjusted to compensate for grinding the cutting edge of punch 46. After extensive wear, the

punch is reset in the ram, and for this purpose the ram is provided with a series of spaced threaded holes 136, 138 and 140. The spacing between these holes may, for example, be one-half inch, in which case the range of adjustment of the screw 80 should be one-half inch or nearly that.

Referring to Figs. 7 and 8, I there show the punch in its lowermost position on the ram, this position being reached only after more than half the length of the punch has been ground away. The force of the ram is applied to the block 124 at the upper end of the punch, by means of a square-headed stud 142, said stud being received in the hole 140. It will be understood that in intermediate stages of punch wear, the stud 142 is positioned in the hole 136, then in the hole 138, and finally in the hole 140.

The screws holding the cross-bar 114 have been changed, the screws 122' being like the screws 122, but shorter. Several pairs of such screws are used, preferably in lengths corresponding to the step-by-step movement of the stud 142. These screws are threaded far enough to accommodate the small, individual sharpenings or grindings of the punch, the upper ends of the screws projecting through the bar or nut 124 as the punch is worn. Theoretically, there is no reason why the original pair of long screws 122 might not be used, these screws then being threaded nearly throughout their length, but because of the extremely long, slender nature of the screws, I prefer to thread the same for only a limited distance, and to use other screws of shorter length as the punch is more extensively worn.

Theoretically, the holes in the punch might be tapped or threaded for the reception of short screws. However, this would have to be done for the full distance before hardening the punch, and I prefer not to even attempt so difficult a threading operation.

Referring now to Figs. 2, 9 and 10 of the drawings, the feed lever 88 may be locked in its outer position, thereby interrupting the feed of the element strip 12. As will be understood by those skilled in the art, this is done in order to provide gaps in the elements secured to the tape, these gaps being, say, two inches long, so that the tape may be severed into individual stringers each having about an inch of spare tape at its ends. A suitable counter is schematically indicated at 144 in Fig. 2, this being operated by link 146 connected to a crank pin 148 on cam shaft 40. The counter may be of the type shown in U. S. Letters Patent No. 2,167,259, issued July 25, 1939, and entitled "Counter." In said patent, a circuit is closed for energizing a solenoid-controlled mechanism during the gap-spacing interval. Such a mechanism is shown in my aforesaid Patent No. 2,201,068. A modified and improved solenoid mechanism, which may be responsive to same counter mechanism, is employed with the present apparatus.

Referring to Fig. 9, a solenoid 150 is mounted beneath the table 152 of the machine, with its core 154 movable vertically. In Fig. 9, it is shown in the elevated position which it assumes when the solenoid is energized. The core is connected by means of a screw 156 to a lock 158, the upper end 160 of which is moved into the path of the feed lever 88. In order to avoid wear, a hardened wear plate 162 is preferably secured at the bottom of the feed lever 88, but this moves with and

stationary wear plate 164. In Fig. 10, the rod 168 is shown in the dropped or lowered position which it assumes when the solenoid is deenergized, and at this time the upper end 160 is disposed beneath the hardened stationary wear plate 164 on which the movable wear plate 160 rides. The wear plate is fixed on top of a boss 166 cast integrally with the machine table 152. The rod 168 carried in feed lever 88 is the shaft or spindle on which the cam roller of the feed lever rotates.

The operation of the machine may be described with particular reference to Figs. 11 through 14 of the drawings, which show successive stages in the operating cycle. In Fig. 11, the element strip 12 is being fed forwardly to bring the jaws 52 of the endmost element astride the beaded edge 170 of the tape 28. At this time the punch 46 is in elevated position, and the strip 12 is being fed forwardly by movement toward the right of feed dog 92 and tooth 98. The forward end of strip 12 is elevated by the punch cross-bar 114, and this elevation is so adjusted as to raise the strip slightly from the surface of the die 48 in order to permit the strip to be fed over a locating pilot 172 forming a part of die 48 and projecting upwardly therefrom. This pilot is adapted to be received in the recess at the bottom of the endmost element in order to properly locate the element during the cutting operation. As strip 12 is fed toward the right by feed tooth 98, the strip lock 106 rises to pass over the projection 174.

Fig. 12 illustrates the cutting operation. The endmost element is resting on die 48, the recess at the bottom of the element being disposed on the pilot 172 previously referred to. The end portion of strip 12 has been flexed downwardly slightly (the curvature is exaggerated in the drawings) by the shearing action of punch 46, which is now in its lowermost position. The locking tooth 108 is disposed behind the projection 174 of strip 12. Although the clamping jaws (56 in Fig. 2) are not shown in this figure, it will be understood that they are operated to clamp the element jaws 52 around the tape bead 170 while the element still rests on die 48. Element jaws 52 seem shortened in Fig. 12 because they are assumed to be still in angular or spread position.

Fig. 13 illustrates the return movement of the punch and feed dog. Punch 46 has risen partway. The element strip now rests on and has been raised slightly by the cross-bar 114. The tape 28 has also experienced part of its upward feed movement, thereby lifting the clamped element 52 upwardly somewhat from die 48. The feed dog 92 has moved part of its return stroke toward the left, the feed tooth 98 rising to pass over the projection 176. The strip is locked by strip lock 106.

Fig. 14 shows the parts in their end position. The strip lock 106 still bears against the projection 174. The feed tooth 98 has moved well back of the projection 176, the feed stroke of tooth 98 being made slightly greater than the pitch of the element wire. The punch cross-bar 114 has raised element strip 12 to a position high enough to clear the pilot 172 of die 48. The previously attached element 52 has been carried up far enough by movement of the tape 28 to properly space the next element therefrom.

The next stage in the operation of the machine may, of course, be illustrated by reverting to Fig. 11, in which the strip is being fed toward

It is believed that the construction and operation, as well as the advantages of my improved apparatus for making slide fasteners, will be apparent from the foregoing detailed description thereof. The machine is simple, has a minimum of parts, and these are given as short a stroke as possible, and are minimized in mass, thus giving the machine a high operating speed. The punch cross-bar replaces the usual elaborate, complex spring pad arrangements. Despite the use of this cross-bar, the punch may be sharpened or reground, and in fact, this may be done repeatedly so as to use a substantial part of the length of the punch. The strip feed mechanism, as well as the punch and die mechanism, are simplified and lightened, in order to reduce the cost and to increase the operating speed of the machine. The strip lock for interrupting the feed of elements to the tape has also been simplified.

It will be apparent that while I have shown and described my invention in a preferred form, many changes and modifications may be made in the structure disclosed, without departing from the spirit of the invention as sought to be defined in the following claims.

I claim:

1. Apparatus for the manufacture of slide fasteners, said apparatus comprising a stationary die for supporting a fastener element to be cut from a strip of connected fastener elements, means to intermittently feed the strip, a punch for operating on said strip and for shearing the same downwardly away from an element left on the stationary die surface, said punch having downward extensions at the sides of the strip and having a cross bar secured to the lower end of said extensions thereby forming a passage through the punch in which the aforesaid strip is received, said cross bar being so located that it raises the strip to elevated position after the cutting operation and preparatory to the next feed movement of the strip over the die.

2. Apparatus for the manufacture of slide fasteners, said apparatus comprising a stationary die including an upwardly projecting pilot for properly locating a fastener element to be cut from a strip of connected fastener elements, means to intermittently feed the strip, a punch for operating on said strip and for shearing the same downwardly away from an element left on the stationary die surface and pilot, said punch having downward extensions at the sides of the strip and having a cross bar secured to the lower end of said extensions thereby forming a passage through the punch in which the aforesaid strip is received, said die being devoid of spring pads or the like and the cross bar of the punch being so located that it raises the strip to elevated position after the cutting operation and preparatory to the next feed movement of the strip over the die and pilot.

3. Apparatus for the manufacture of slide fasteners, said apparatus comprising a stationary die supporting a fastener element to be cut from a strip of connected fastener elements, means to intermittently feed the strip, a punch for operating on said strip and for shearing the same downwardly away from an element left on the stationary die, said punch having heels extending downward at the sides of the strip of the punch, a cross bar at the lower end of the punch, slender screws passing vertically through the cross bar and heels in order to detachably hold the cross bar in position so as to permit grinding or sharpening of the lower end of the punch, said

cross bar being so located that it raises the strip to elevated position after the cutting operation and preparatory to the next feed movement of the strip over the die.

4. Apparatus comprising a stationary die for supporting an element to be cut from a strip of connected elements, means to intermittently feed the strip, a punch for operating on said strip and for shearing the same downwardly away from an element left on the stationary die, said punch having heels extending downward at the sides of the strip, holes extending through said heels longitudinally of the punch all the way to the upper end of the punch, a cross bar at the lower end of the punch, long slender screws passing upwardly through the cross bar and through said holes to a threaded member at the top of the punch, in order to detachably hold the cross bar in position so as to permit grinding or sharpening of the lower end of the punch, said cross bar being so located that it raises the strip to elevated position after the cutting operation and preparatory to the next feed movement of the strip over the die.

5. Apparatus for the manufacture of slide fasteners, said apparatus comprising a stationary die including an upwardly projecting pilot for properly locating a fastener element to be cut from a strip of connected fastener elements, means to intermittently feed the strip, a punch for operating on said strip and for shearing the same downwardly away from an element left on the stationary die and pilot, said punch having heels extending downward at the sides of the strip, holes extending through said heels longitudinally of the punch all the way to the upper end of the punch, a cross bar at the lower end of the punch, long slender screws passing upwardly through the cross bar and through said holes to an appropriately threaded member at the top of the punch, in order to detachably hold the cross bar in position so as to permit grinding or sharpening of the lower end of the punch, said cross bar being so located that it raises the strip to elevated position after the cutting operation and preparatory to the next feed movement of the strip over the pilot and die.

6. Apparatus including a die, means to intermittently feed a strip of connected elements through the die, a relatively long slender punch cooperating with the die for cutting the strip into individual elements, said punch having a uniform cross-section throughout its length, said cross-section being a contoured cross-section to produce a shaped cut, a ram to which the punch is secured, a ram housing slidably receiving the ram, drive means bearing against the top of the ram and including an adjustable screw for varying the position of the ram and with it the punch to compensate gradually for sharpening of the punch, a stud projecting from said ram at the top end of the punch, and a plurality of spaced holes along the ram for receiving said stud in one of a number of different positions to compensate for extensive shortening of the punch, the aforesaid adjusting screw affording a range of adjustment at least equalling the spacing between successive positions of the stud on the ram, the ram housing accommodating a range of movement of the ram at least equalling the stroke of the ram plus the spacing between successive positions of the stud on the ram.

7. Apparatus for the manufacture of slide fastener elements, said apparatus including a die, means to intermittently feed a strip of con-

nected embryo fastener elements through the die, a relatively long slender punch cooperating with the die for cutting the same into individual fastener elements, said punch having a uniform cross-section throughout its length, said cross-section being a contoured cross-section to produce a shaped cut, a ram to which the punch is secured, a ram housing slidably receiving the ram, drive means bearing against the top of the ram and including an adjustable screw for varying the position of the ram and with it the punch to compensate gradually for sharpening of the punch, a stud projecting from said ram at the top end of the punch, and a plurality of spaced holes along the ram for receiving said stud in one of a number of different positions to compensate for extensive shortening of the punch, the aforesaid adjusting screw affording a range of adjustment at least equalling the spacing between successive positions of the stud on the ram, the ram housing accommodating the stroke of the ram plus the spacing between successive positions of the stud on the ram.

8. Apparatus comprising a stationary die for supporting an element to be cut from a strip of connected elements, means to intermittently feed the strip, a relatively long slender punch for operating on said strip and for shearing the same downwardly away from an element left on the stationary die, said punch having a uniform cross-section throughout its length, said cross-section being a contoured cross-section to produce a shaped cut, said punch having heels extending downward at the sides of the strip, a cross bar detachably mounted at the lower end of the punch, said cross bar being so located that it raises the strip to elevated position after the cutting operation and preparatory to the next feed movement of the strip over the die, a ram to which the punch is secured, a ram housing slidably receiving the ram, driving means bearing against the top of the ram and including an adjustable screw for varying the position of the ram and with it the punch to compensate gradually for sharpening of the punch, a stud projecting from said ram at the top end of the punch, and a plurality of spaced holes along the ram for receiving said stud in one of a number of different positions to compensate for extensive shortening of the punch, the aforesaid adjusting screw affording a range of adjustment at least equalling the spacing between successive positions of the stud on the ram, the ram housing accommodating the stroke of the ram plus the spacing between successive positions of the stud on the ram.

9. Apparatus for the manufacture of slide fasteners, said apparatus comprising a stationary die including an upwardly projecting pilot for properly locating a fastener element to be cut from a strip of connected fastener elements, means to intermittently feed the strip, a relatively long slender punch for operating on said strip and for shearing the same downwardly away from an element left on the stationary die and pilot, said punch having a uniform cross-section throughout its length, said cross-section being a contoured cross-section to produce a shaped cut, said punch having heels extending downward at the sides of the strip, a cross bar detachably mounted at the lower end of the punch, said cross bar being so located that it raises the strip to elevated position after the cutting operation and preparatory to the next feed movement of the

punch is secured, a ram housing slidably receiving the ram, driving means bearing against the top of the ram and including an adjustable screw for varying the position of the ram and with it the punch to compensate gradually for sharpening of the punch, a stud projecting from said ram at the top end of the punch, and a plurality of spaced holes along the ram for receiving said stud in one of a number of different positions to compensate for extensive shortening of the punch, the aforesaid adjusting screw affording a range of adjustment at least equalling the spacing between successive positions of the stud on the ram, the ram housing accommodating the stroke of the ram plus the spacing between successive positions of the stud on the ram.

10. Apparatus for the manufacture of slide fasteners, said apparatus comprising a stationary die including an upwardly projecting pilot for properly locating a fastener element to be cut from a strip of connected fastener elements, means to intermittently feed the strip, a punch for operating on said strip and for shearing the same downwardly away from an element left on the stationary die surface, said punch having heels extending downward at the sides of the strip, holes extending through said heels longitudinally of the punch all the way to the upper end of the punch, a cross bar at the lower end of the punch, long slender screws passing upwardly through the cross bar and said holes to an appropriately threaded member at the top of the punch in order to detachably hold the cross bar in position so as to permit sharpening of the lower end of the punch, said cross bar being so located that it raises the strip to elevated position after the cutting operation and preparatory to the next feed movement of the strip over the pilot and die, a ram to which the punch is secured, a ram housing slidably receiving the ram, driving means bearing against the top of the ram and including an adjustable screw for varying the position of the ram and with it the punch to compensate for sharpening of the punch, a stud projecting from said ram at the top end of the punch, and a plurality of spaced holes along the ram for receiving said stud in one of a number of different positions to compensate for extensive shortening of the punch, the aforesaid adjusting screw affording a range of adjustment at least equalling the spacing between successive positions of the stud on the ram.

11. Apparatus for the manufacture of slide fasteners, said apparatus including a punch and die for operating on a strip of connected embryo fastener elements having projections, and high speed feed means for intermittently feeding said strip, said feed means comprising a cam, a pivoted feed lever having a cam roller bearing against the cam, a feed dog mounted directly on said feed lever, a very tiny feed tooth pivotally mounted on the end of said feed dog, and resilient means urging said feed tooth into engagement with the projections on the strip, whereby the horizontally reciprocable mass is minimized by the omission of slides or the like for carrying the feed dog, and the transversely reciprocable mass is minimized by localizing the same to the relatively minute feed tooth.

12. Apparatus for the manufacture of slide fasteners, said apparatus including a punch and die for operating on a strip of connected embryo fastener elements having projections, and high speed feed means for intermittently feeding said strip,

lever made of duralumin or equivalent light-weight metal and having a cam roller bearing against the cam, a feed dog fixedly mounted directly on said feed lever at a point immediately over the strip, a very small hardened feed tooth pivotally mounted on the end of said feed dog, and resilient means urging said feed tooth downwardly into engagement with the projections on the strip, whereby the horizontally reciprocable mass is minimized by the light-weight feed lever and the omission of slides or the like for carrying the feed dog, and the vertically reciprocable mass is minimized by localizing the same to the relatively minute feed tooth, said tooth being slidable transversely of the projections on the element strip.

13. Apparatus for the manufacture of slide fasteners, said apparatus including a punch and die for operating on a strip of connected embryo fastener elements, feed means for intermittently feeding said strip, said feed means comprising a cam, a horizontal feed lever having a cam roller bearing against the cam, a feed dog moved by said feed lever for engaging and moving the strip, and means to interrupt feed of the element strip for gap spacing, said means comprising a locking pin slidable vertically into an upward position for engaging the feed lever when the cam has moved the lever to outermost position, a solenoid beneath said locking pin, and a solenoid core

connected to said locking pin, the arrangement being such that energization of the solenoid moves the core and locking pin upwardly into position to lock the feed lever, said core and pin being gravitationally moved downward out of the path of the feed lever when the solenoid is deenergized.

14. Apparatus for the manufacture of slide fasteners from a strip of integrally connected embryo fastener elements, said apparatus comprising a reel of element strip, means to rotatably support the same, brake means to resist too free unwinding of the reel, punch and die means to sever the element strip into individual elements, feed means to intermittently feed the strip, and means to maintain a loop of relatively slack wire between the reel and the feed means, said means comprising an arm pivoted at one end and carrying a rotatable grooved weight at the opposite end, said weight resting on said element strip, and said arm being so located that it is moved upwardly toward a horizontal position when the loop of element strip is shortened, and is lowered toward a vertical position when the loop of element strip is lengthened, the brake being so adjusted that its static friction is overcome by the weight when the weight arm is moved toward horizontal position.

GEORGE WINTRISS.

DEFENDANT'S EXHIBIT "BH"

F. Ulrich Patent No. 2,370,380

Filed Mar. 28, 1939

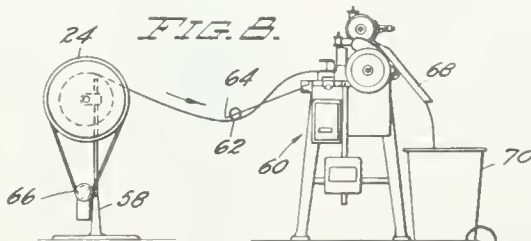
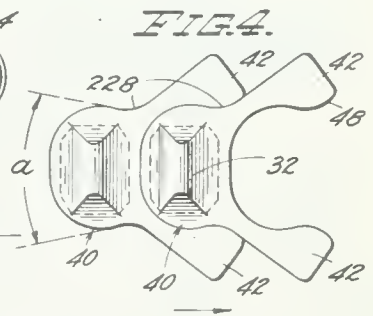
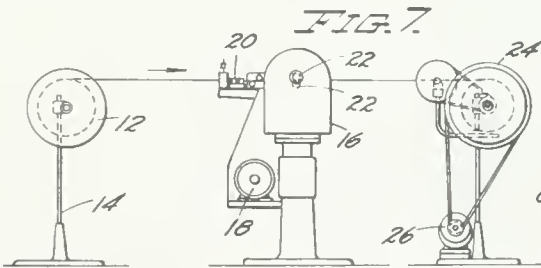
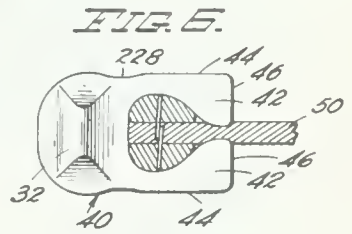
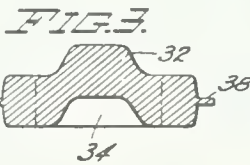
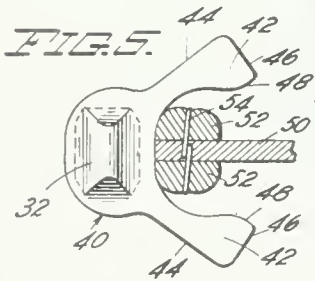
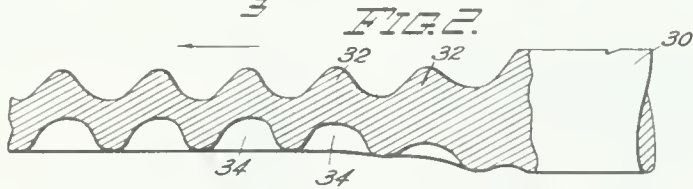
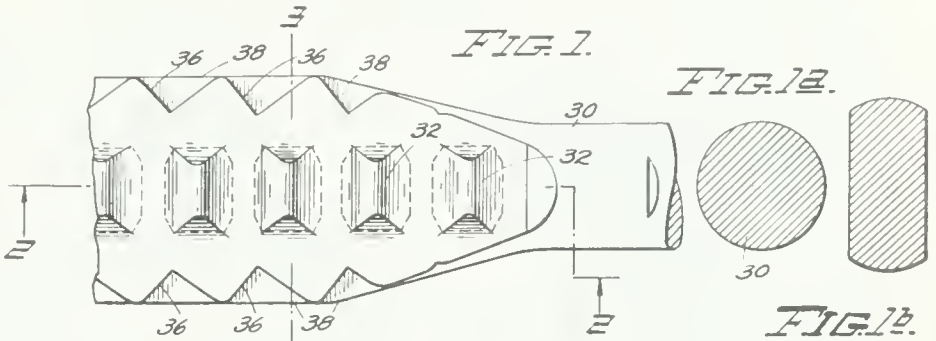
Patented Feb. 27, 1945



MACHINE AND METHOD FOR MAKING SLIDE FASTENERS

Filed March 28, 1939

6 Sheets-Sheet 1



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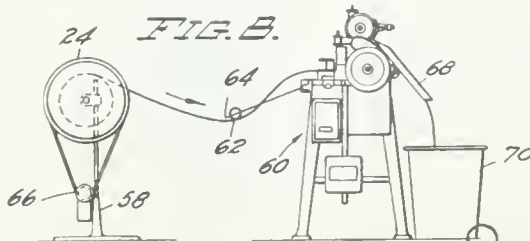
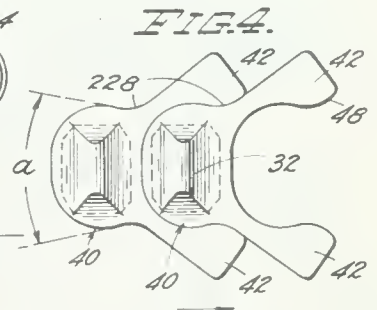
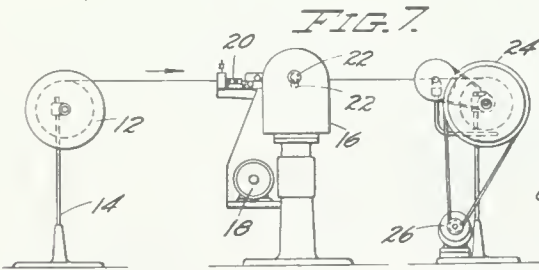
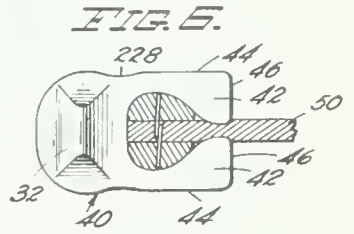
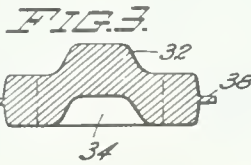
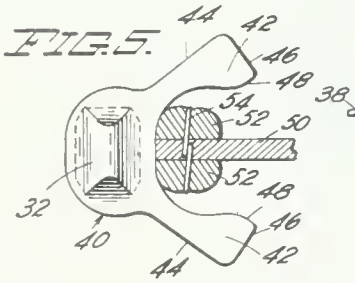
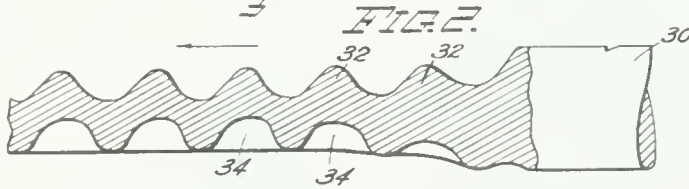
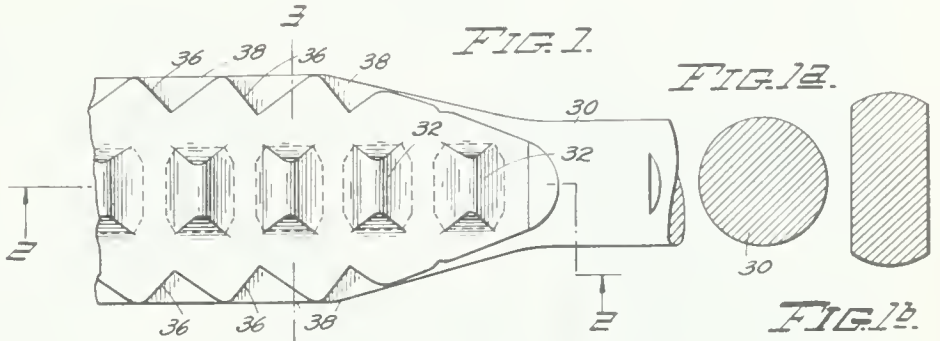
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2,370,380

MACHINE AND METHOD FOR MAKING SLIDE FASTENERS

Filed March 28, 1939

6 Sheets-Sheet 1



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2,370,380

MACHINE AND METHOD FOR MAKING SLIDE FASTENERS

Filed March 28, 1939

6 Sheets-Sheet 2

FIG. 9.

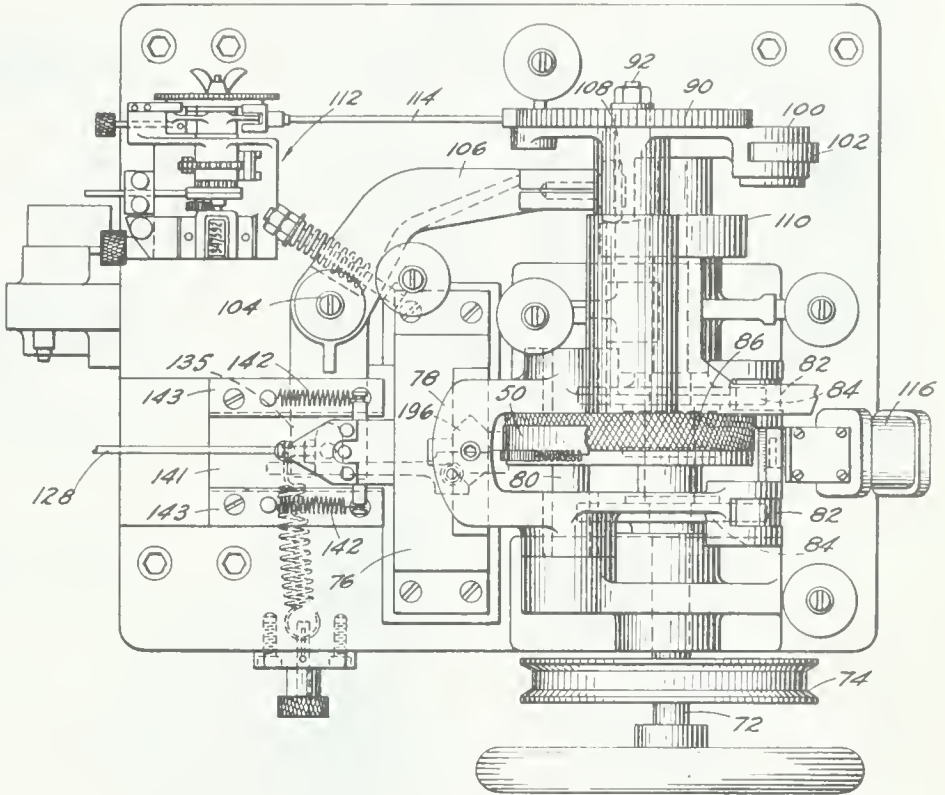
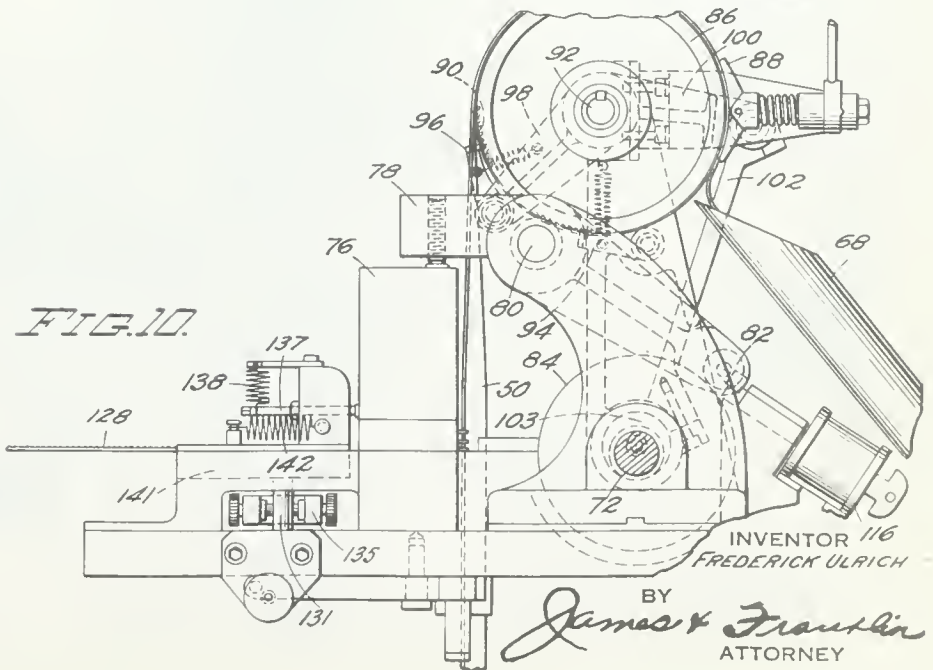


FIG. 10.



MACHINE AND METHOD FOR MAKING SLIDE FASTENERS

Filed March 28, 1939

6 Sheets-Sheet 3

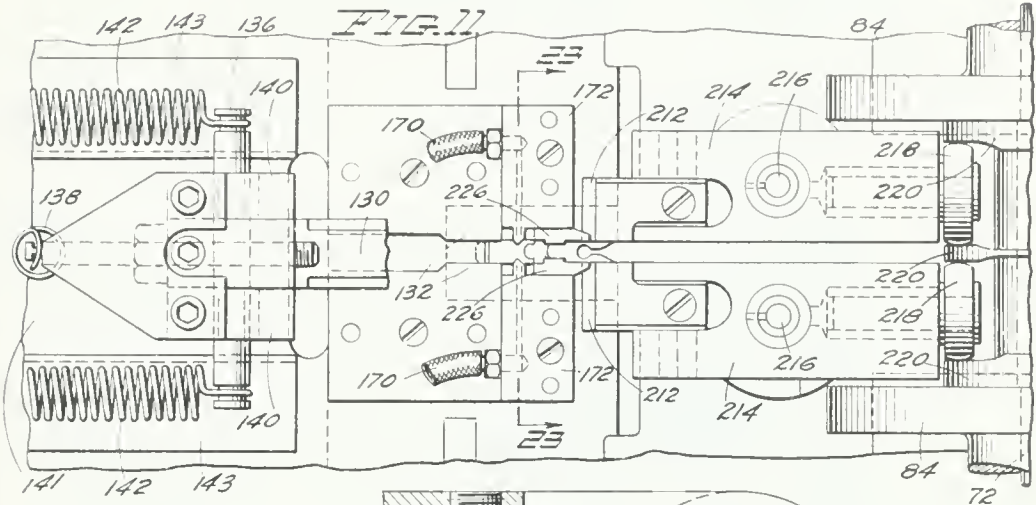
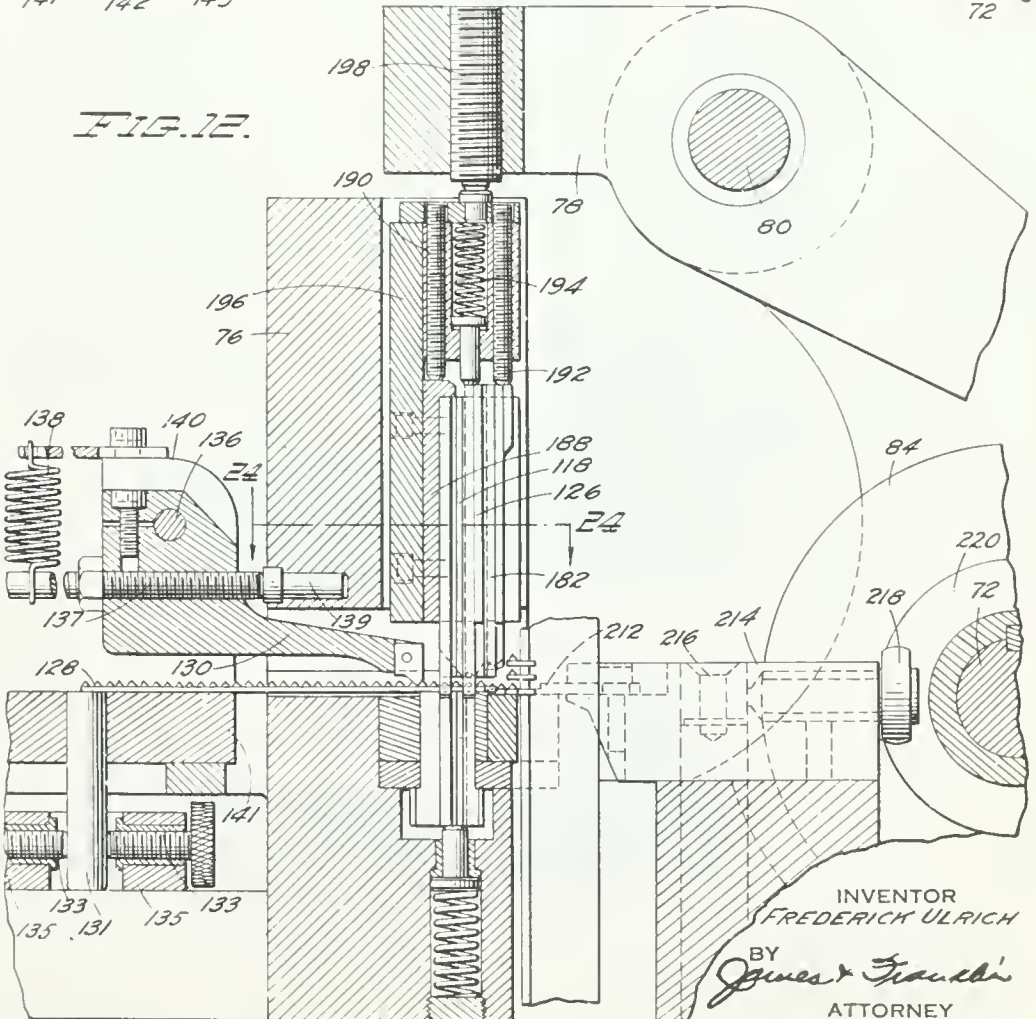


FIG. 12.



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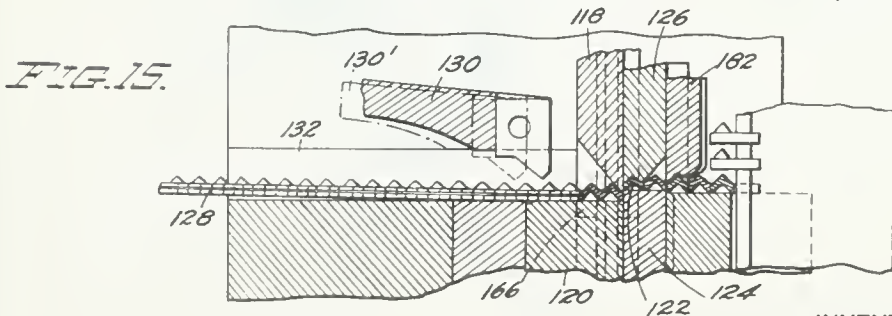
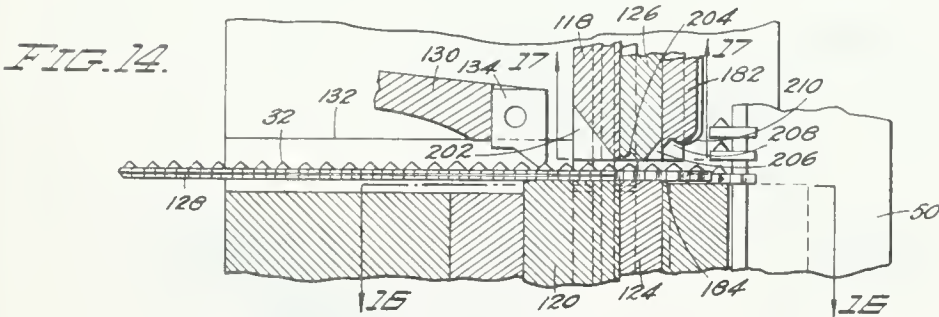
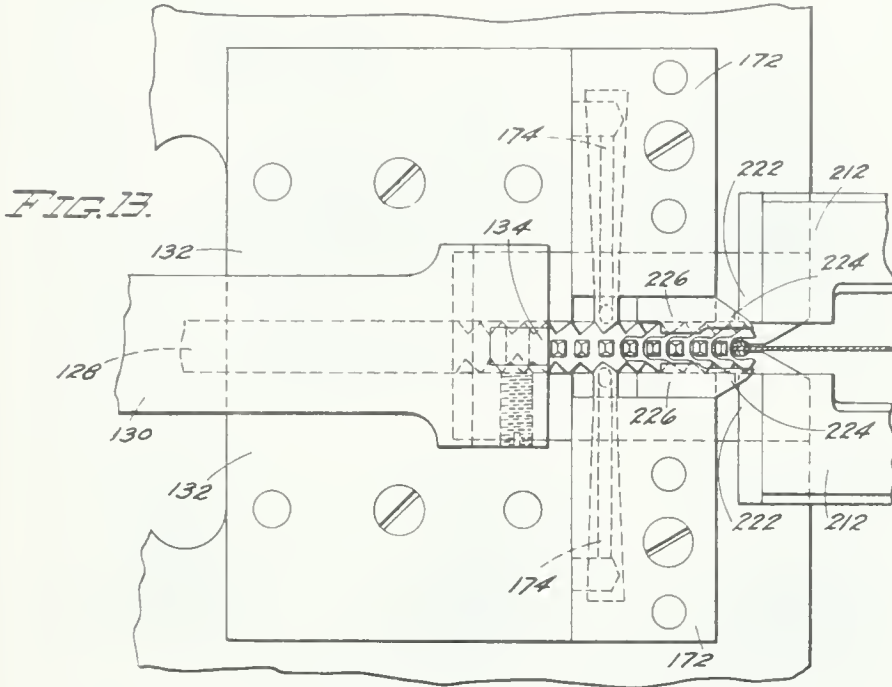
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2,370,380

MACHINE AND METHOD FOR MAKING SLIDE FASTENERS

Filed March 28, 1939

6 Sheets-Sheet, 4



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MACHINE AND METHOD FOR MAKING SLIDE FASTENERS

Filed March 28, 1939

6 Sheets-Sheet 5

FIG. 16.

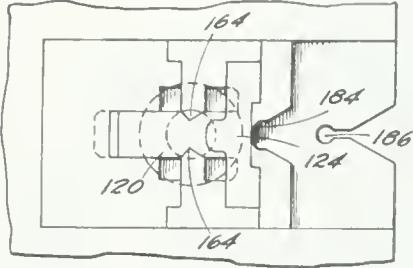


FIG. 17.

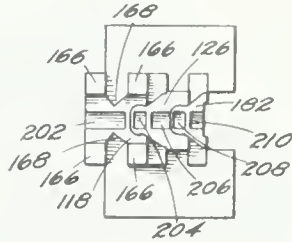


FIG. 18.

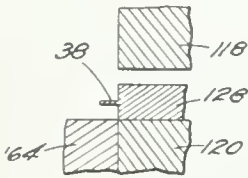


FIG. 19.

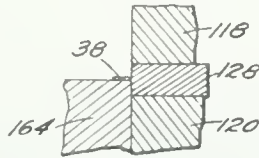


FIG. 20.

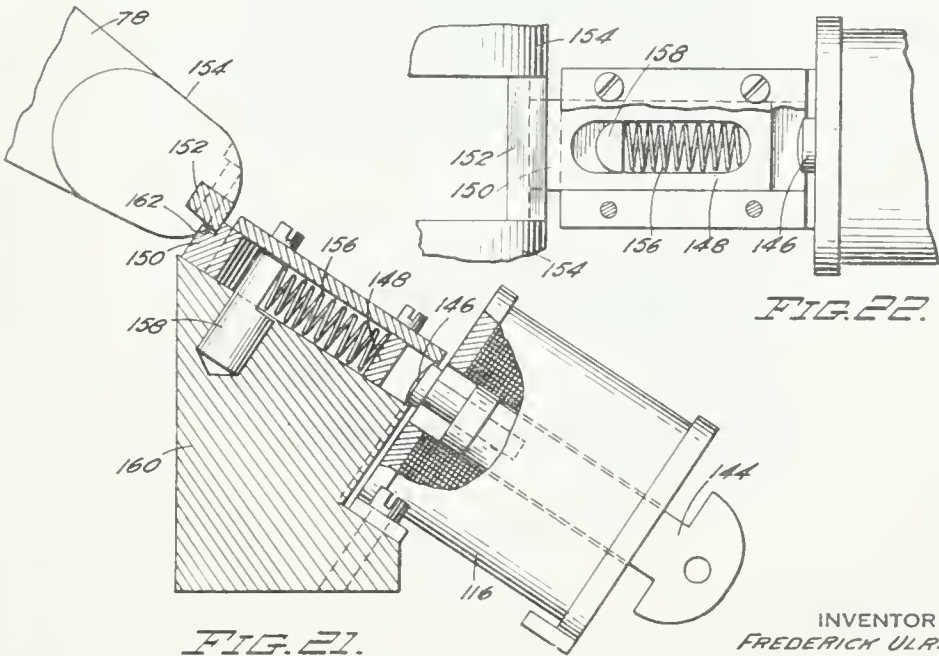
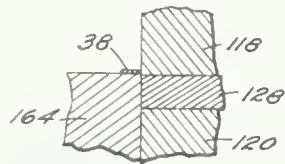


FIG. 21.

FIG. 22.

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Feb. 27, 1945.

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2,370,380

MACHINE AND METHOD FOR MAKING SLIDE FASTENERS

Filed March 28, 1939

6 Sheets-Sheet 6

FIG. 23.

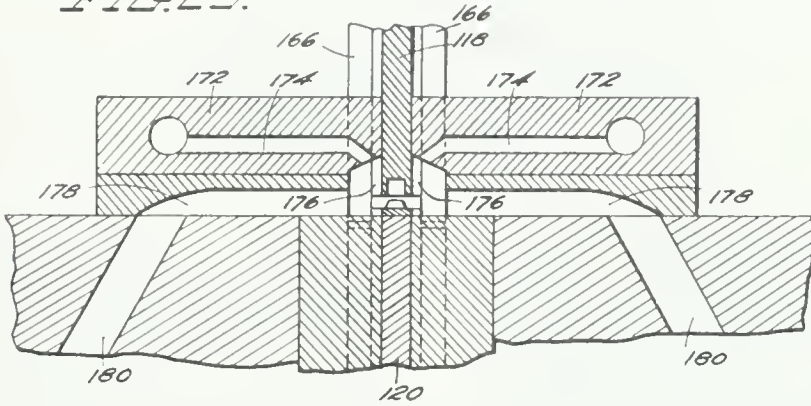


FIG. 24.

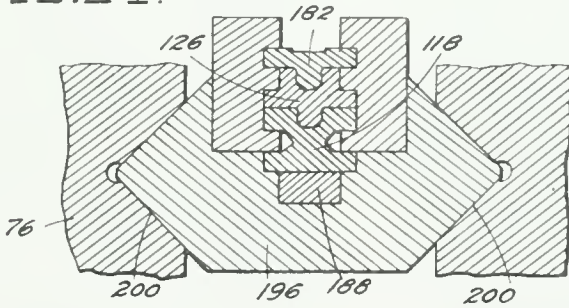


FIG. 25.

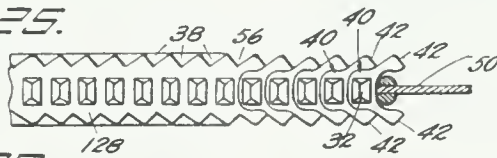


FIG. 26.



FIG. 27.

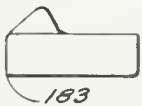
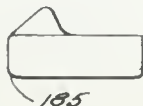


FIG. 28.



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UNITED STATES PATENT OFFICE

2,370,380

MACHINE AND METHOD FOR MAKING
SLIDE FASTENERS

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a corporation of New Jersey

Application March 28, 1939, Serial No. 284,550

29 Claims. (Cl. 153—1)

This invention relates to slide fasteners and the manufacture thereof.

The ordinary methods of manufacturing standard slide fastener elements involve considerable scrap or waste material, due to the irregular configuration of the element when in open-jawed condition.

The primary object of my invention is to generally improve the manufacture of standard slide fastener elements, particularly with a view to increasing the efficiency and economy of manufacture, and still more specifically with a view to minimizing scrap or waste to a negligible amount while making and handling the material for the elements as a continuous wire. A further object is to make the invention applicable to raw stock of the most conventional and inexpensive character as, for example, a simple round wire of uniform diameter.

Still another object of my invention is to apply the improvement features thereof to the general process disclosed and claimed in co-pending application, Serial No. 215,180, filed by George Wintritz on June 22, 1938, now Patent No. 2,201,068, of May 14, 1940, and entitled "Manufacture of slide fasteners," which process is a most efficient, advantageous and desirable one, despite the single disadvantage that it involves the production of considerable scrap or waste, that disadvantage being eliminated as the main object of the present invention. This object is fulfilled by so shaping the elements that the jaws are so widely spaced and spread, and so shaped as to form a space therebetween large enough to receive the head of the next element, the jaws having diverging outer sides adapted to be brought into substantially parallel relation when the jaws are closed, and having ends converging at such an angle that when the jaws are closed on the tape the ends come perpendicular to the tape.

Further objects of my invention center about the mechanism for feeding the wire toward the tape. In accordance with the present invention, I provide a feed dog which is reciprocable in the direction of feed, but which is prevented from moving downwardly by suitable guides. The severing punch bears against the wire in back of the endmost element being severed from the wire, said punch moving the wire downwardly against the resistance of a spring pad. The timing of the machine is such that the wire is held downwardly by the punch during retraction of the feed dog, and is held upwardly by the spring pad during forward movement of the feed dog, thus

providing intermittent feed without necessitating the use of a check dog or holding dog. In accordance with still another feature of the invention, the feed of wire toward the tape is interrupted when providing a gap or space between stringers, by holding the punch downwardly during the spacing operation. In the particular apparatus described herein, this not only interrupts feed of the wire, but avoids repeated reciprocation of the wire relative to the element last severed therefrom, which in turn avoids wear and loosening of the fit between successive elements.

In order to provide elements of conventional shape with parallel sides when the jaws are closed on the tape, it is necessary for the elements to have diverging sides while the jaws are open. The wire is accordingly preferably provided with serrated edges. However, the most rapid and economical method of forming the wire is by rolling the same under extremely high pressure between a pair of small diameter rolls as described in the aforesaid Wintritz Patent No. 2,201,068. However, in thus rolling the wire, a thin triangular fin is left in the serrations of the side edges of the wire.

A further object of the present invention is to provide suitable means for trimming or serrating the side edges of the wire, and more specifically, for severing the aforesaid triangular fins from the wire. This operation is preferably performed by the main severing punch, the latter cooperating with appropriate die surfaces which trim the fin from the wire. In accordance with a further feature and object of the present invention, I provide special air blast means so disposed with relation to the punch and die for trimming the wire, that the bits of scrap are dependably blown out of the apparatus into a suitable receptacle.

Other objects of the present invention are to prevent angular disposition of an element caused by a kink in the wire or by pressure of the severing punch, and to make room for a rounding or finishing punch, if desired. For this purpose, a series of already-severed elements may be provided between the end of the wire and the tape. Another object is to properly support and confine such severed elements, and to prevent improper orientation of the same, and further, to prevent longitudinal separation of the same.

To the accomplishment of the foregoing and other objects which will hereinafter appear, my invention consists in the method steps and apparatus elements and their relation one to the

other, as hereinafter are more particularly described in the specification and sought to be defined in the claims. The specification is accompanied by drawings in which:

Fig. 1 is a plan view of a piece of wire having a part formed in accordance with the present invention;

Fig. 1a shows the section of the round wire before rolling;

Fig. 1b is a section through a flat wire which may be used instead of round wire;

Fig. 2 is a longitudinal section taken in the plane of the line 2—2 of Fig. 1;

Fig. 3 is a transverse section taken in the plane of the line 3—3 of Fig. 1;

Fig. 4 shows the relation of the elements when severed;

Fig. 5 illustrates the application of an element to the tape before closing of the jaws;

Fig. 6 is a similar view after closing of the jaws;

Fig. 7 is a side elevation illustrating the apparatus for rolling the wire;

Fig. 8 is a side elevation illustrating the apparatus for severing the wire into individual elements and attaching the same to the tape;

Fig. 9 shows the attaching apparatus in plan;

Fig. 10 shows the upper part of the attaching apparatus in elevation;

Fig. 11 is a plan view of a part of the attaching apparatus drawn to enlarged scale;

Fig. 12 is a section taken in elevation through the punch and feed mechanism;

Fig. 13 is a plan view explanatory of the severing die and the clamping plates;

Fig. 14 is a section through the die with the punches in elevated position;

Fig. 15 is a similar section with the punches in down position;

Fig. 16 is a plan view of the die taken approximately in the plane of the line 16—16 of Fig. 14;

Fig. 17 is an inverted plan view of the punches taken in the plan of the line 17—17 of Fig. 14;

Figs. 18, 19 and 20 are explanatory of the removal of the fin from the wire;

Fig. 21 is a partially sectioned side elevation showing the lock for interrupting the feed of elements to the tape when providing a space between stringers;

Fig. 22 shows the same looking from above;

Fig. 23 is a transverse section through the die, taken in the plane of the line 23—23 of Fig. 11, and illustrates the air blast passages for removal of scrap;

Fig. 24 is a section through the punches, and is taken in the plane of the line 24—24 of Fig. 12;

Fig. 25 shows the wire and the severed elements leading to the tape;

Fig. 26 is a side elevation of the same; and

Figs. 27 and 28 show the element in profile before and after the rounding operation.

The present process may be divided into two stages, as in the aforesaid Patent No. 2,201,068. The first stage is illustrated in Fig. 7, and in this stage a wire is deformed, preferably by rolling the wire under pressure, to form a fastener wire such as is illustrated in Figs. 1, 2 and 3 of the drawings. The stock used may be a simple round or oval wire, or, if desired, it may be a flat or somewhat flattened wire. This wire is taken from a reel 12 supported on a suitable pedestal 14, and is fed through a rolling mill 16, the latter being driven by a motor 18. The mill may, if desired, be preceded by appropriate straightening

rolls 20. The rolling mill is not disclosed in detail herein, it being like that disclosed in the aforesaid Patent No. 2,201,068. The wire is rolled in a single passage under high pressure through comparatively tiny or small-diameter pressure rolls 22, and is then reeled up on a suitable reel 24, the latter being turned by motor 26.

Referring now to Figs. 1, 2 and 3 of the drawings, the round wire 30 is flattened, and deformed to provide a comparatively closely spaced series of interlocking means. In the present case the interlocking means are of conventional type, and consist of a projection 32 on one side and a recess 34 on the opposite side of the wire. The side edges of the wire are preferably notched or serrated as is indicated at 36. In using a rolling process with the rolls above and below the wire, it is easier and preferable to leave a fin of metal 38 in the serrations. The nature of this fin is most clearly shown in Fig. 3. The wire of Figs. 1 and 2 may be rolled from flattened wire, as is indicated in Fig. 1b. This places less load on the forming rolls, but I prefer the round wire of Fig. 1a as it is somewhat less expensive. In either case the raw wire stock is a simple smooth wire, and both types are inexpensive compared to specially shaped wires.

The manner in which this wire may be severed to form fastener elements will be clear from inspection of Figs. 4 and 25. In these figures it will be seen that the severed elements comprise a head 40 and widely spread jaws 42. The head portion 40 carries the aforesaid projection 32 on its upper side and recess 34 (Fig. 2) on its lower side. It will be seen on inspection of the drawings that the head of each element is located within and conforms to the jaws of the next element, the head filling the space between the spread jaws. From a more accurate viewpoint, it may be said that the jaws 42 are so widely spaced or spread apart and are so shaped on the interior, as to form a space therebetween large enough to receive the head 40.

The shape of the exterior of the jaws is also important. In Fig. 5, I show the individual element severed from the wire and moved against the beaded edge of a tape. When the jaws are closed, the element is attached to the tape as shown in Fig. 6. Comparing Figs. 5 and 6, it will be seen that the outer edges 44 of the jaws change from a very divergent position to parallel position, and furthermore, are spaced apart an amount equal to the width of the head 40. The end walls 46 of the jaws are preferably disposed substantially perpendicular to the outer edges 44, so that when the jaws are closed the ends 46 form a surface which is substantially perpendicular to the tape, as is shown in Fig. 6. When the element is completed and fastened to the tape, it does not differ noticeably from elements made by the more conventional wasteful methods except, perhaps, for the shape of the opening between the jaws receiving the beaded edge of the tape. This, however, is not normally visible.

At the inside the jaws are preferably provided with short walls 48 which preferably extend generally parallel to the outer walls 44 and generally perpendicular to the end walls 46. With this arrangement, the inside walls 48 bear directly against the tape when the jaws are closed, as shown in Fig. 6, thus providing a substantial bearing surface to prevent cutting or penetration of the tape. The tape itself may be made in accordance with known methods, it comprising a woven tape 60 having cords 52 stitched on opposite sides

at one edge of the tape, as by means of the stitching 54.

In Fig. 25 it will be observed that the fin 38 is removed at the point 56, this preferably being done as a part of the severing operation which cuts the wire into individual fastener elements. Because it is very thin and small in area, the fin constitutes only a very small amount of scrap or waste.

The apparatus for removing the fin, severing the elements and attaching the same to the tape, is shown in Fig. 8. The reel 24 of fastener wire is supported on a suitable stand 68. The fastener wire is taken from reel 24 and fed to the attaching machine 60. A loop of slack 62 may be maintained between reel 24 and machine 60, as by means of a feeler 64 controlling a motor 66 for intermittently unwinding the reel. The attaching machine 60 severs the elements and attaches the same to a tape, the resulting continuous stringer being fed through a discharge tube 68 into a basket 70.

The attaching apparatus is shown in somewhat greater detail in Figs. 9 and 10 of the drawings. The apparatus comprises a timing shaft or cam shaft 72, said shaft carrying pulley 74 belted to a suitable driving motor. The punches are carried by a ram 196 slidable in the guides or ways of a ram housing 76. The ram is reciprocated by a generally U-shaped rocker 78, the two branches of said rocker being pivoted at 80, and the ends of the branches carrying cam follower rollers 82 which cooperate with cams 84 carried by the cam shaft 72. The tape 50 is fed intermittently upward by means of a tape feed drum 86, the tape being held on the drum by means of a shoe 88. Drum 86 is moved by suitable pawl and ratchet mechanism, the ratchet wheel 90 being mounted at the end of shaft 92 carrying the feed drum. There is a holding pawl 94 and a feed pawl 96, the latter being carried on arm 98 pivoted on shaft 92 and having an oppositely extending arm 100 connected by means of a connecting rod 102 to an eccentric 103 on cam shaft 72.

The wire is intermittently fed in a horizontal direction toward tape 50. The feed mechanism will be described in detail later, but at this point it may be observed that the feed dog is reciprocated by means of a feed lever pivoted at 104, the arm 106 of the feed lever carrying a cam follower roller 108 cooperating with a cylindrical cam 110 mounted on cam shaft 72. The apparatus further includes a counter generally designated 112, this counter being connected to the cam shaft by a suitable link 114. After a predetermined number of fastener elements has been attached to the tape, the counter functions to interrupt the feed of the wire toward the tape. This is described in greater detail later, but at present it may be pointed out that the counter operates to energize a solenoid 116 which in turn locks the cam followers 82 of the rocker 78 in elevated position, thereby interrupting the reciprocation of the punches.

The nature of the severing punch and die may be explained with reference to Figs. 14 through 17 of the drawings. The severing punch is indicated at 118. A spring pad 120 is located therebeneath. It should be understood that punch 118 operates by cutting the wire downwardly away from the endmost element, rather than by cutting the element away from the wire. The element 122 (Fig. 15) rests on the top surface of a stationary die member 124. If desired it may be

held downwardly by means of a suitable holding and locating pad 126 which is nested alongside the punch, but which is spring-pressed and therefore adapted to yieldably stop as the punch continues its downward cutting stroke. The operation will be apparent by comparison of Figs. 14 and 15. In Fig. 14 the punch 118 and holding pad 126 are shown in elevated position. The fastener wire 128 is supported by spring pad 120, the latter being in elevated position. In Fig. 15, the punch is shown in down position, and it will be seen that while the element 122 is held against die member 124 by means of the locating pad 126, the punch 118 has descended and forced the wire 128 downwardly, together with the spring pad 120, the wire being sheared from the element 122. When the punch again rises, the wire is raised by spring pad 120, thus bringing the jaws at the end of the wire back into the initial position with the jaws encompassing the head of the severed element 122.

Figs. 14 and 15 may also be used to illustrate the feed of the wire 128. The wire is fed by means of a feed dog 130 which bears against the projections 32 on the wire, as is shown in Fig. 14. The dog 130 may be rigid, or may be spring-pressed downwardly, but is prevented from moving lower than the position shown in Fig. 14, by suitable guides or rails 132 on opposite sides of the tooth 134 of the feed dog. The relation of the parts is such that when spring pad 120 is in elevated position, as shown in Fig. 14, the feed dog engages the wire, but when the wire is depressed by punch 118, as shown in Fig. 15, the wire is disengaged from feed dog 130. The timing of the machine at the cam shaft is such that feed dog 130 moves forward while punch 118 is elevated, and moves backward, as from the solid to the broken line position 130' of Fig. 15, when the punch is down. This construction eliminates the need for a holding dog or check dog, the wire being fed forwardly when engaged by the feed dog, and being held against movement by the punch at all other times. In fact, there is nothing to urge rearward movement of the wire, the wire being disengaged from the feed dog when the latter is moving back. The operation may be made very rapid, for the stroke of the feed dog is small, and is not accompanied by any appreciable vertical movement.

Referring to Fig. 12, the feed dog 130 is pivotally mounted on a pin 136, and is normally urged downwardly by pull spring 138. The pin 136 is carried in bearings 140 forming a part of a reciprocable feed carriage or slide 141 (Figs. 9 and 10) running in guides 143. The slide 141 is normally pulled to retracted position by means of pull springs 142 (Figs. 9 and 11).

A pin 131 (Fig. 12) projects downwardly from slide 141, and is engaged by screws 133 carried in the ends 135 of the feed arm 106 (Fig. 9). These screws provide adjustment of the terminal point of the stroke of feed dog 130. The exact terminal point is accurately determined by adjustment of screw 137, which strikes an insert 139 in block 76. An extension of screw 137 receives the lower end of spring 138.

The manner in which the feed of wire 128 is interrupted to produce a gap or space between stringers will now be apparent, for if the severing punch 118 is locked in its down position (Fig. 15) the wire 128 is held below the feed dog 130, and the latter reciprocates idly without feeding the wire. This is of advantage because of its simplicity and because it eliminates reciprocation

of the punch and rocker and associated parts. Moreover, it avoids moving the jaws at the end of the wire repeatedly into and out of engagement with the head of the element last severed. Such repeated reciprocations would tend to wear away metal around the outside of the head and the inside of the jaws, bringing these parts below size, and in any event, producing a very loose fit therebetween instead of the snug, accurate engagement which is now obtained.

In connection with Figs. 9 and 10, it has already been mentioned that the counter energizes solenoid 116, thereby locking the right-hand end of the rocker in elevated position. The mechanism for this purpose is shown in greater detail in Figs. 21 and 22 of the drawings, referring to which it will be seen that on energization of solenoid 116, the core 144 is drawn into the solenoid. The preferably non-ferrous button 146 at the end of the core bears against block 148 and moves the end 150 of the block beneath a suitable bar 152 extending across the ends 154 of rocker 78. The bar 148 is normally retracted by a suitable compression spring 156, said spring being located in a slot cut through the bar, and one end of said spring reacting against a stationary pin 160 projecting into the slot from the stationary block 160 on which the parts are mounted.

In operation, the rocker 78 and with it the bar 152 is reciprocating rapidly. When solenoid 116 is energized the end 150 of the block 148 moves into engagement with bar 152, but cannot come beneath bar 152 until the bar has been elevated by the rise of the cam actuated rocker 78. End 150 then slides beneath bar 152 and holds the rocker arm in locked position until the solenoid is deenergized. The pressure of bar 152 against block 148 is sufficient to prevent the block from moving to retracted position until the rise of the cam again reaches the rocker. This relieves the pressure on the block 148 and it is thereupon retracted by spring 156. In this way the movement of the rocker is in complete cycles, and the rocker cannot be stopped or started in the middle of a cycle. To further insure this result, the working end of block 148 is preferably cut at a slight angle or provided with an undercut, as is indicated at 162, and the lower face of cross-bar 152 is preferably shaped to a mating angle. The slightly undercut relation of the surfaces guards against premature retraction of block 148.

The triangular pieces of fin 38 are preferably removed by the severing punch, the latter cooperating with appropriate stationary parts on the die. Referring to Fig. 16, it will be seen that the die has stationary die surfaces 164 which are pointed or shaped to conform to the desired notches or serrations in the wire. The spring pad 120 is indented to receive the points 164. Referring now to Fig. 17, it will be seen that the severing punch 118 is provided with four heels 166 and that the punch is channeled at 168 between the heels to mate with the die surfaces 164 of Fig. 16. Referring now to Figs. 18 through 20, these figures are fragmentary transverse sections at the die surfaces 164. In Fig. 18 the punch 118 is raised, and spring pad 120 supports the wire 128 in elevated position. At this time the fin 38 is disposed above the stationary die surface 164. In Fig. 19, the punch 118 has descended partially, and has moved wire 128 downwardly with spring pad 120 until the fin 38 rests on stationary die surface 164. In Fig. 20 the punch 118 has moved downwardly to the ends of its stroke, thereby severing the wire 128 from the scrap or

fin 38, the latter remaining on stationary die surface 164. The heels 166 of the severing punch 118 (Fig. 17) preferably are of such length as to bear against the pad 120 (Fig. 16) during the cutting stroke, as is shown in Fig. 15. This helps prevent deformation of the wire under the impact of the punch.

The bits of scrap or fin are very tiny, and cannot be discharged gravitationally as with ordinary scrap or waste, because they are on top of the die. They tend to cling to the parts of the apparatus, particularly in the presence of an oil film. In the present apparatus, this difficulty has been overcome by removing the scrap with the aid of a blast of air. Referring to Fig. 11, the compressed air is supplied through flexible pipes 170, these leading into blocks 172 secured directly on top of the die. Referring now to Fig. 23, which is a section taken on the line 23-23 of Fig. 11, it will be seen that the compressed air is led inwardly through passages 174 and is then directed downwardly at the punch 118 and into enclosed chambers 176. The compressed air then flows outwardly through passages 178, carrying the fin or scrap with it, and then downwardly through discharge passages 180 leading to a suitable box beneath the attaching machine for receiving the waste. The compressed air blowing at the sides of punch 118 tends to get between the severed scrap and the punch, and this probably accounts for the success with which the scrap is blown away through passages 178 and 180.

As a refinement which, however, is by no means essential, I prefer to provide the apparatus with a finishing punch or rounding punch, this being indicated at 182 in Figs. 14 and 15. It is moved together with punch 118 and forms a part of the punch assembly. Its purpose is to round the lower edge of the element about the head. I may explain that during the severing operation the periphery of the head is provided with a rather sharp or square corner at the bottom. This is indicated at 183 in Fig. 27. The elements may be left in this fashion, but it is preferable to round the corner, as is indicated at 185 in Fig. 28. For this purpose the elements may be treated after being secured to the tape, as by means of wire brushes. However, this requires an extra operation, and may tend to dirty the tape, and does not round the edge of the element very much. In the present arrangement, the stationary die surface beneath one of the severed elements is depressed and rounded somewhat, as is indicated at 184 in Fig. 26. The rounding punch 182 forces the subjacent element into the die curvature at 184, and thereby rounds the corner of the head. This will also be seen from examination of Fig. 14, the curved surface 184 of the die being shown unoccupied in Fig. 14.

Referring to Fig. 16, the downward step of the die surface is clearly indicated at 184, and it will be seen in this figure that the outline of the step 184 conforms to the exterior outline of the fastener element, and clears the jaws. The elements remain at the slightly lower elevation of the right-hand part of the die surface until they reach the tape, the latter being guided in the tape guide 186.

Reverting to Figs. 25 and 26, it will be seen that in the present apparatus there are five severed elements between the wire 128 and the tape 60. The rounding punch operates upon the middle one of these five elements. The last two elements are always at the lower die level. The

third element from the end is initially at the upper die level, but after descent of the rounding punch, is moved to the lower die level. It should be understood that the difference in elevation is very slight indeed, and need only be a matter of $\frac{15}{1000}$ of an inch.

The construction of the punch assembly may be explained with reference to Fig. 12 in which it will be seen that the severing punch 118 is secured to a guide 188, the elevation of the punch being adjusted by means of the screw 190. The rounding punch 182 is adjusted by means of screw 192. The spring pad 126 is nested between the punches 118 and 182, and is yieldably urged downwardly by means of spring 194. The entire punch assembly is carried by a ram 198 which is reciprocable in the guides or ways of ram housing 76. Rocker 78 may be provided with an adjusting screw 198 bearing against the ram. Referring now to Fig. 24, the manner in which the edges of ram 196 are received in guides or ways 200 formed in ram housing 76, will be apparent. The nested relation of the severing punch 118, the spring pad 126 and the rounding punch 182, is also clearly shown.

Before leaving the description of the punch assembly it may be pointed out with reference to Fig. 17 that punch 118 is cut away at 202 to clear the projections on the fastener wire reaching the punch; that the spring pressed pad 126 is recessed at 204 to fit around the projection of the element being severed from the wire, and the pad 126 therefore acts as a locating pad which helps insure a uniform location of the cut or periphery of the head about the projection and recess of the head. The spring pad 126 is cut away at 206 to clear the projection of the next element. The rounding punch 182 is recessed at 208 to fit about the projection of the element being rounded, and this is desirable in order not to flatten or deform the shape of the element during the rounding operation. This punch is also cut away at 210 to clear the projection of the next element.

The shaping of some of these recesses will be clear from inspection of Fig. 14, severing punch 118 being cut away at 202; spring pad 126 being recessed at 204, and cut away at 206; the rounding punch 182 being recessed at 208 and cut away at 210.

The endmost element is clamped on the tape by an oppositely movable pair of clamping plates. Referring to Figs. 11 and 12, the clamping plates 212 are secured to levers 214 pivoted at 216. The opposite ends of the levers carry cam followers 218 which run between cylindrical cams 220, said cams being carried on the main cam shaft 72 of the machine. The cams are so shaped as to oppositely move the clamping plates.

Referring now to Fig. 13, it will be seen that the corners 222 of clamping plates 212 are so located as to engage the jaws of the endmost element and at the same time to clear the jaws of the element next to the end. The clamping plates are thinned to come beneath the ends 224 of guides or rails 226 which guide and confine the already-severed elements. When the clamping plates 212 move together, they compress the spread jaws of the endmost element from a condition such as that shown in Figs. 13 and 5, to the closed condition of Fig. 6.

The provision of a series of severed elements between the wire and the tape, as for example, the five severed elements shown in Fig. 25, is not essential but is of advantage in that it provides room for the locating pad and the rounding

punch when used. The use of elements which are severed before being delivered to the tape and clamped thereon is also of advantage in avoiding angular disposition of the elements (viewed in elevation) such as might be caused by a kink in the wire or the pressure of the severing punch.

The advantage of keeping the elements integrally related in the form of a wire is substantially retained when using a group of severed elements of the configuration here employed. In the first place, the elements are confined and guided in a track and between guide walls surrounding the ends of the spread jaws. The elements are prevented from moving to improper orientation because of the manner in which the head of one element is snugly received within the jaws of the next element. Finally, any possibility of longitudinal separation of the elements is prevented by the provision of a slight undercut between the elements when viewed in plan. Thus, referring to Fig. 4, it will be seen that the transverse width of the head is reduced at the point 228, or the sides are non-parallel, as indicated at *a*. In other words, the head is necked or narrowed very slightly and even if an undercut of only a few thousandths of an inch is used, it is adequate to prevent longitudinal separation of the elements. This kind of undercut does not, however, prevent transverse separation of the elements, such as takes place when the endmost element is clamped on the tape, and the tape then moves vertically upward to carry the elements upwardly away from the stationary die and the clamping plates.

It is believed that the method of the present invention, as well as the construction and operation of the apparatus, will be apparent from the foregoing detailed description. Simple, uniform wire stock which may be either round or flattened in section is fed between small-diameter rolls which squeeze the wire under high pressure and which in the course of a single pass through the rolls, deform the wire to provide a series of closely spaced projections and recesses along the same. The side edges are also preferably notched or serrated, either completely, or with a slight remaining fin. The wire is reeled, the reels being used as needed for the attaching machine. There the wire is unreel and is operated upon by punch and die mechanism which removes the fin or triangular pieces of waste, and which severs the wire into fastener elements so shaped that the head of one element is nested fully within and substantially fills the space within the spread jaws of the next element. This relation of the elements avoids waste of metal. The elements are kept in nested relation and are fed toward an intermittently moved tape where the endmost element is clamped on the tape. If desired, a finishing operation such as that produced by the rounding punch may be applied to the elements between the cutting punch and the tape. The upward movement of the tape disengages the attached element from the next element, whereupon the series is again advanced to bring another element astride the tape.

The many advantages of the invention will also be understood from the detailed description. The main advantage, of course, is that the invention minimizes waste or scrap metal. This is accomplished while using elements of generally conventional type, that is, elements the jaws of which come into substantially parallel relationship when closed. The ends of the jaws are

perpendicular to the sides and the tape when closed, and the inner walls of the edges at the ends includes a broad bearing surface for engaging the tape without cutting or penetrating the same. The elements are so crowded or nested together that there are three times as many elements for a given length of wire compared to the practice in Patent No. 2,201,068, previously referred to. This increases the life of the pressure rolls because the rolls produce stock for three times as many elements for each revolution of the rolls. Moreover, the reciprocating strokes in the attaching machine are reduced to a very small amount. The feed of the wire, for example, is only about one-third of that formerly used. The reciprocation of the punch is merely the thickness of the wire. These changes contribute to high speed operation of the attaching machine, and I have successfully operated the attaching machine at a speed of 2400 R. P. M. The manner in which the feed of the wire is interrupted by simply locking the punch rocker with the punch in down position, also contributes to the desired high speed operation. This latter feature prevents reciprocation of the elements into and out of engagement with consequent loosening of the fit therebetween. The use of a series of severed elements between the cutting punch and the tape provides room for the cutting punch and the associated spring pad which holds the element being cut. It also provides room for a finishing or rounding punch. It frees the jaws of the endmost element for the clamping operation, and avoids angular positioning of the element, as by reason of the punch thrusting or a bend in the wire. The cutting action used whereby the punch severs the wire from the element instead of vice versa, has the advantage of simplifying the wire feed mechanism; makes it possible to remove the triangular fin or scrap while using only a single cutting operation; and also provides a greater contact area or "land" at the cutting edge of the punch. The sides of the head are non-parallel or converge so as to provide an undercut or interlock of the elements after they are severed and re-engaged, and this prevents longitudinal separation. The nesting of the elements prevents improper orientation as they are moved toward the tape.

It may be pointed out that the strip of metal initially employed may have smooth, continuous edges instead of being notched or serrated, as here disclosed. In such case, the punch and die mechanism will notch or serrate the strip much as here disclosed, the main difference being that the tool will cut through the full thickness of metal instead of merely a thin fin, and in such case the percentage waste or scrap will, of course, be increased.

Going still further, the strip of metal may be a plain flat strip, devoid not only of notches but also of projections and recesses. In such case the apparatus must be modified in a number of respects, the most important of which is the provision of a forming punch to provide the projections and recesses. The rolling apparatus may then be eliminated altogether, and the smooth or "raw" wire is fed directly into the attaching machine. This aspect of my invention is not illustrated or claimed herein, it being fully disclosed and claimed in my copending companion application, Serial No. 264,551, filed concurrently therewith, now Patent No. 2,302,075, patented November 17, 1942.

The said companion or divisional application

together with the present application, are continuations in part of my earlier application, Serial No. 179,299, filed December 11, 1937, now Patent No. 2,221,740, of November 12, 1940.

Coming back to the present disclosure, the strip of metal fed to the attaching machine may be more instead of less finished, that is, it may be fully notched or serrated (devoid of fin) when it reaches the attaching machine, and in such case no fin need be removed, and no air blast need be provided. If the wire is initially formed or rolled without a fin, then there is no scrap or waste at all.

The feed dog may be mounted rigidly as disclosed in my aforesaid companion application, (instead of pivotally) because the fastener wire is depressed by the punch during retraction of the feed dog.

It will therefore be apparent that while I have shown and described my invention in a preferred form, many changes and modifications may be made, without departing from the spirit of the invention defined in the following claims.

In the appended claims, I intend the expression "notched or serrated strip" to include either a fully notched strip or a strip which is substantially notched except for a thin residue or fin of metal as specifically disclosed herein.

In claims dealing with the gap-spacing mechanism, I refer to a "counter," which, of course, may be any such device to determine the length of the stringer or spacing between gaps.

I claim:

1. In the manufacture of slide fastener elements comprising a head and spread jaws connected thereto, said jaws being so widely spaced and spread and so shaped as to form a space therebetween large enough to receive the entire head of an identical element, and said jaws being so shaped that when closed the outer edges come into substantially parallel relationship, the method which includes pressing a continuous strip of metal to form a closely spaced series of interlocking means along the entire length of the strip, the interlocking means being so closely spaced as to correspond to a series of embryo elements with spread jaws only if the head of one element is nested fully within and substantially fills the space within the spread jaws of the next element, punching away small triangular pieces of scrap or waste at the side edges of the end of the strip in order to give the end of the strip notched or serrated side edges conforming to the outer ends of spread jaws having the desired shape, and immediately thereafter severing the strip on an outline corresponding to the outline of the head and intersecting the inner angle of the triangular notches at the sides of the strip, in order to define elements of the desired shape without scrap or waste other than the aforesaid triangular pieces of scrap.

2. In the manufacture of slide fasteners, the method which includes providing a wire having a series of interlocking means therealong, the width of the wire equalling that of the desired fastener elements with spread jaws, intermittently feeding a tape transversely of the wire, intermittently feeding the wire toward the tape, severing the end of the wire entirely across the wire in such configuration as to form a fastener element having a head including the interlocking means and having spread jaws, the head being of such dimension as to fully occupy the space between the jaws of the next element, restoring the jaws at the end of the wire and severed element to-

gether again in fully nested relation, intermittently moving the nested severed elements toward the tape, and clamping the jaws of the endmost element on the tape to secure the element to the tape.

3. In the manufacture of slide fasteners, the method which includes providing a wire having a series of interlocking means therealong, severing the end of the wire in such configuration as to form a fastener element having a head including the interlocking means and having spread jaws, the head being of such dimension as to fit between the jaws of the next element, restoring the jaws at the end of the wire and severed element together again in nested relation, the configuration of the head and jaws being such as to interlock the head and jaws of the nested elements against separation longitudinally of the wire, moving the interlocked severed elements toward a tape, and clamping the jaws of the endmost element on the tape to secure the element to the tape.

4. In the manufacture of slide fasteners, the method which includes providing a wire having a series of interlocking means therealong, the width of the wire equalling that of the desired fastener elements with spread jaws, severing the end of the wire entirely across the wire in such configuration as to form a fastener element having a head including the interlocking means and having spread jaws, the head being of such dimension as to fully occupy the space between the jaws of the next element, restoring the jaws at the end of the wire and severed element together again in fully nested relation, moving the nested severed elements toward a tape, finishing the shaping of the nested severed elements before they reach the tape, and clamping the jaws of the endmost element on the tape to secure the element to the tape.

5. Apparatus for the manufacture of slide fasteners, said apparatus comprising means to intermittently feed a wire toward a moving tape and clamping plates, said wire having a width just equal to that of the desired fastener elements with spread jaws, a stationary die, a mating punch movable transversely of the wire to sever the wire from a piece of the wire projecting beyond the punch and overlying the die, the outline of the punch being such that the projecting piece constitutes a fastener element having a head with spread jaws projecting forwardly therefrom, the head being of such dimension as to fill the space between the jaws, and a spring pad beneath the punch to restore the wire to the initial raised position.

6. Apparatus for the manufacture of slide fasteners, said apparatus comprising means to intermittently feed a wire toward a moving tape and clamping plates, said wire having a width just equal to that of the desired fastener elements with spread jaws, punch and die mechanism to sever the wire all the way across into fastener elements each having a head with spread jaws projecting forwardly therefrom, the punch being spaced from the tape an amount such that a number of severed elements lie on the die between the punch and the tape, and fixed guides on the die at each side of said elements to hold the same in alignment, the aforesaid punch and die mechanism being so shaped as to form fastener elements the head end of which is dimensioned to be received in and to fully occupy the jaw end of the next element, thereby avoiding

waste of metal and preventing improper orientation of the elements in the aforesaid guides.

7. Apparatus for the manufacture of slide fasteners, said apparatus comprising means to intermittently feed a wire toward a moving tape and clamping plates, said wire having a width just equal to that of the desired fastener elements with spread jaws, and having closely spaced interlocking means therealong, a die and a punch movable transversely of the wire to sever the wire all the way across from a piece of the wire projecting beyond the punch and overlying the die, the outline of the punch being such that the projecting piece constitutes a fastener element having a head with spread jaws projecting forwardly therefrom, the head being of such dimension as to fill the space between the jaws, and a spring pad beneath the punch to restore the wire to the element previously severed therefrom, the punch being spaced from the tape an amount such that a series of severed elements nested together with the head of each filling the jaw space of the next lie on the die between the punch and the tape.

8. Apparatus for the manufacture of slide fasteners, said apparatus comprising means to intermittently feed a wire having closely spaced projections therealong, a punch movable transversely of the wire to bear against and sever the wire from a small piece of the wire projecting beyond the punch, a locating pad yieldably movable with the punch to hold the projecting piece, the outline of the punch being such that the projecting piece constitutes a fastener element having a head with spread jaws projecting forwardly therefrom, the head being of such dimension as to fill the space between the jaws, the lower end of the locating pad being so formed as to mate with the projection on the element in order to properly locate the periphery of the element relative to the projection thereon.

9. Apparatus for the manufacture of slide fasteners, said apparatus comprising means to intermittently feed a tape, means to intermittently feed toward the tape a wire having closely spaced interlocking means therealong, a punch movable transversely of the wire to sever therefrom a fastener element having a head with spread jaws projecting forwardly therefrom, a cam for reciprocating the punch, a rocker arm between the cam and punch, a counter, and means responsive to the counter for locking the rocker arm in outermost position at the cam and thereby interrupting the supply of severed elements to the tape without interrupting feed of the tape.

10. Apparatus for the manufacture of slide fasteners, said apparatus comprising means to intermittently feed toward a tape a wire having closely spaced interlocking means therealong, a punch movable transversely of the wire to sever a piece of the wire, the outline of the punch being such that the severed piece constitutes a fastener element having a head with spread jaws projecting forwardly therefrom, the head being of such dimension as to fill the space between the jaws, a spring pad beneath the punch to restore the severed parts, the punch being spaced from the tape an amount such that a series of severed elements nested together with the head of each filling the jaw space of the next lie between the punch and the tape, and finishing means located between the severing punch and the tape, said finishing means functioning to

smooth a part of an element between the severing punch and the tape.

11. Apparatus for the manufacture of slide fasteners, said apparatus comprising means to intermittently feed toward a tape a wire having closely spaced interlocking means therealong, a punch movable transversely of the wire to sever the wire from a piece of the wire projecting beyond the punch, the outline of the punch being such that the projecting piece constitutes a fastener element having a head with spread jaws projecting forwardly therefrom, the head being of such dimension as to fill the space between the jaws, a spring pad beneath the punch to restore the wire to the element previously severed therefrom, the punch being spaced from the tape an amount such that a series of severed elements nested together with the head of each filling the jaw space of the next lie between the punch and the tape, and a rounding punch associated with said severing punch and located between the severing punch and the tape, said rounding punch functioning to round the lower peripheral edge of the head of an element between the severing punch and the tape.

12. Apparatus for the manufacture of slide fasteners, said apparatus comprising means to intermittently feed a wire having a series of projections therealong, said wire feed means comprising a reciprocating dog for engaging a projection on the wire and feeding the wire during its forward movement, a punch movable transversely of the wire to sever the wire downwardly from a piece of the wire projecting beyond the punch, the outline of the punch being such that the aforesaid severed piece constitutes a fastener element, and a spring pad beneath the punch, the timing of the machine being such that the wire is held downwardly by the punch during retraction of the feed dog and is held upwardly by the spring pad during forward movement of the feed dog.

13. Apparatus for the manufacture of slide fasteners, said apparatus comprising means to intermittently feed a wire having closely spaced interlocking means therealong, said wire feed means comprising a feed cam and a feed dog reciprocated thereby for engaging and feeding the wire during its forward movement, a punch movable transversely of the wire to sever the wire downwardly from a piece of the wire projecting beyond the punch, the outline of the punch being such that the projecting piece constitutes a fastener element having a head with spread jaws projecting forwardly therefrom, the head being of such dimension as to fill the space between the jaws, a spring pad beneath the punch to restore the wire to the initial raised position, and a punch operating cam, the timing of the cams of the machine being such that the wire is held downwardly by the punch during retraction of the feed dog, and is held upwardly by the spring pad during the forward movement of the feed dog.

14. Apparatus for the manufacture of slide fasteners, said apparatus comprising means to intermittently feed a wire, said wire feed means comprising a reciprocating feed dog for engaging a projection on the wire and feeding the wire during its forward movement, a punch movable transversely of the wire to sever the wire downwardly from a piece of the wire projecting beyond the punch, the outline of the punch being such that the severed piece constitutes a fastener element, a spring pad beneath the punch,

the timing of the machine being such that the wire is held downwardly by the punch during retraction of the feed dog and is held upwardly by the spring pad during forward movement of the feed dog, a counter, and means responsive to the counter to lock the punch in down position, thus holding the wire downwardly out of engagement with the reciprocating feed dog.

15. Apparatus for the manufacture of slide fasteners, said apparatus comprising means to intermittently feed a wire having closely spaced interlocking means therealong, said wire feed means comprising a feed cam and feed dog reciprocated thereby for engaging and feeding the wire during its forward movement, a punch movable transversely of the wire to sever the wire downwardly from a piece of the wire projecting beyond the punch, the outline of the punch being such that the projecting piece constitutes a fastener element having a head with spread jaws projecting forwardly therefrom, the head being of such dimension as to fill the space between the jaws, a spring pad beneath the punch to restore the wire to the initial raised position, a punch operating cam, a rocker between the cam and the punch, the timing of the machine being such that the wire is held downwardly by the punch during retraction of the feed dog and is held upwardly by the spring pad during forward movement of the feed dog, a counter, and means responsive to the counter to lock the rocker in outermost position with the punch in down position, thus holding the wire downwardly out of engagement with the reciprocating feed dog.

16. Apparatus for the manufacture of slide fasteners, said apparatus comprising means to intermittently feed a wire, a punch movable transversely of the wire to sever the wire downwardly from a fastener element projecting beyond the punch, a spring pad beneath the punch, and pointed stationary die surfaces beneath the wire at opposite sides of the spring pad cooperating with mating recesses on the sides of the punch for removing triangular shaped pieces of scrap metal on opposite sides of the wire.

17. Apparatus for the manufacture of slide fasteners, said apparatus comprising means to intermittently feed a wire toward a tape, said wire having a series of interlocking means therealong, a punch movable transversely of the wire to sever the wire downwardly from a piece of the wire projecting beyond the punch, the outline of the punch being such that the projecting piece constitutes a fastener element having a head with spread jaws projecting forwardly therefrom, the head being of such dimension as to fill the space between the jaws, a spring pad beneath the punch to restore the wire to the initial raised position, and stationary die surfaces beneath the wire at opposite sides of the spring pad for removing triangular shaped pieces of scrap metal on opposite sides of the wire.

18. Apparatus for the manufacture of slide fasteners, said apparatus comprising means to intermittently feed a wire, punch and die means to so cut the wire as to form fastener elements therefrom and also small pieces of scrap which remain on the die as the punch descends, and means to feed a blast of air continuously at the side of the punch and thence over the top of the die mechanism in order to blow the pieces of scrap outwardly therefrom.

19. Apparatus for the manufacture of slide fasteners, said apparatus comprising means to intermittently feed a wire, said wire having in-

terlocking means thereon, punch and die mechanism to sever the wire, the outline of the punch being such that the severed piece constitutes a fastener element having a head with spread jaws projecting forwardly therefrom, the head being of such dimension as to fill the space between the jaws, additional punch and die surfaces for removing a triangular-shaped piece of scrap metal at the outside of the jaws, which pieces remain on the die as the punch descends, and air blast means for helping transfer the small triangular pieces of scrap to an appropriate receptacle including nozzles to blow air at the sides of the punch and thence outwardly over the top of the die.

20. Apparatus for the manufacture of slide fasteners, said apparatus comprising means to intermittently feed toward a tape a wire having serrated side edges, the serrations of which carry a comparatively thin fin, said wire also having a series of interlocking means, a punch movable transversely of the wire to sever the wire downwardly from a piece of the wire projecting beyond the punch, the outline of the punch being such that the projecting piece constitutes a fastener element having a head with spread jaws projecting forwardly therefrom, the head being of such dimension as to fill the space between the jaws, a spring pad beneath the punch to restore the wire to the initial raised position, and stationary die surfaces beneath the wire at opposite sides of the spring pad for removing the triangular shaped fins or scrap metal on opposite sides of the wire.

21. Apparatus for the manufacture of slide fasteners, said apparatus comprising means to intermittently feed toward a tape a wire having serrated side edges, the serrations of which carry a comparatively thin fin, said wire also having a series of interlocking means, a punch movable transversely of the wire to sever the wire downwardly from a piece of the wire projecting beyond the punch, the outline of the punch being such that the projecting piece constitutes a fastener element having a head with spread jaws projecting forwardly therefrom, the head being of such dimension as to fill the space between the jaws, a spring pad beneath the punch to restore the wire to the initial raised position, stationary die surfaces beneath the wire at opposite sides of the spring pad for removing the triangular shaped fins or scrap metal on opposite sides of the wire, and air blast means for helping remove the small triangular pieces of fin or scrap left on top of said stationary die surfaces, said means including conduits to guide the compressed air to a point above the pieces of scrap at opposite sides of the punch, and to then guide the air and scrap metal away from the punch to an appropriate receptacle.

22. In the manufacture of slide fastener elements comprising a head and spread jaws connected thereto, said jaws being so widely spaced and spread and so shaped as to form a space therebetween large enough to receive the entire head of an identical element, and said jaws being so shaped that when closed the outer edges come into substantially parallel relationship and having approximately perpendicular ends, the method which includes punching away small triangular pieces of scrap or waste at the side edges of a strip in order to give the strip notched or serrated side edges conforming to the square outer ends of spread jaws having the desired shape, the notches or serrations being so closely

spaced as to correspond to a series of embryo elements with spread jaws if the head of one element is nested fully within and substantially fills the space within the spread jaws of the next element, and severing the strip on an outline corresponding to the outline of the head and intersecting the inner angle of the triangular notches at the sides of the strip, in order to define elements of the desired shape without scrap or waste other than the aforesaid triangular pieces of scrap.

23. In the manufacture of slide fasteners, the method which includes severing the end of a wire in such configuration as to form a fastener element having a head and spread jaws, the head being of such dimension as to fit between the jaws of the next element, restoring the jaws at the end of the wire and severed element together again in nested relation, the configuration of the head and jaws being such as to interlock the head and jaws against separation longitudinally of the wire, moving the interlocked severed elements toward a tape, and clamping the jaws of the endmost element on the tape to secure the element thereto.

24. Apparatus for the manufacture of slide fastener elements comprising a head and spread jaws connected thereto, said jaws being so widely spaced and spread and so shaped as to form a space therebetween large enough to receive the entire head of an identical element, and said jaws being so shaped that when closed, the outer edges come into substantially parallel relationship, said apparatus comprising means to intermittently feed a wire having the width of the elements with spread jaws, and a single punch and die mechanism, a portion of said punch and die being so shaped as to cut small, triangular pieces of scrap from the side edges of the wire at the end of the wire in order to give the wire notched or serrated side edges conforming to the outer ends of spread jaws having the desired shape, another portion of said punch and die mechanism operating to cut the wire or strip on a line corresponding to the outline of the head and intersecting the inner angle of the triangular notches at the sides of the strip, whereby elements of the desired shape are cut from the wire without waste other than the aforesaid triangular pieces of scrap.

25. Apparatus for the manufacture of slide fasteners, said apparatus comprising means to intermittently feed a tape upwardly, means to intermittently horizontally feed toward the tape a wire having closely spaced projections therealong, said wire feed means including a horizontally reciprocating feed dog for engaging a projection on the wire and thereby feeding the wire, a stationary die and a punch movable downwardly to sever the wire downwardly from a piece of the wire projecting beyond the punch and overlying the stationary die, the outline of the punch and mating die being such that the severed piece constitutes a fastener element having a head with spread jaws projecting forwardly therefrom, a cam and cam follower for reciprocating the punch, a counter, and means responsive to the counter for locking the cam follower in outermost position and thereby interrupting reciprocation of the punch with the punch and wire in down position, and consequently interrupting the supply of severed elements to the tape, without, however, interrupting feed of the tape.

26. Apparatus for the manufacture of slide fasteners, said apparatus comprising means to

intermittently feed a wire toward a tape, said wire having a series of interlocking means thereon, a stationary die and a punch movable transversely of the wire to sever the wire downwardly from a piece of the wire projecting beyond the punch and overlying the die, the outline of the punch and mating die being such that the projecting piece constitutes a fastener element having a head with spread jaws projecting forwardly therefrom, the head being of such dimension as to fill the space between the jaws, a spring pad beneath the punch to restore the wire to the initial raised position, stationary die surfaces beneath the wire at opposite sides of the spring pad cooperating with mating channels on the sides of the punch for removing triangular shaped pieces of scrap on opposite sides of the wire, and air-blast means for helping remove the triangular pieces of scrap left on top of said stationary die surfaces, said means causing a flow of air from the sides of the punch outwardly over the top of the die.

27. Apparatus for the manufacture of slide fasteners, said apparatus comprising means to guide a wire having a width equal to the width of an element with spread jaws, a punch and die operating to sever the wire, said die having a generally key-hole shaped slot for supporting and guiding an upwardly fed tape having a beaded edge, said die further having a convex cutting portion shaped to conform to the head of the element being severed, said die further comprising a depressible spring pad fitting within and mating with said convex cutting portion, said pad lifting the wire clear of the die for forward feed, said punch having a concave side mating with the aforesaid convex die portion, the arrangement being such that, when the punch descends, it severs the wire downwardly from an element supported on the stationary die portion at the end of the wire, the outline of the punch and die being such that the severed piece constitutes a fastener element having a head with spread jaws projecting forwardly therefrom, the head being of such dimension as to fully occupy the space between the jaws without scrap or waste, wire feed means to intermittently feed the wire to the punch and die, each of the repeated feed distances equalling only a small fraction of the length of an element, tape feed means to intermittently feed the tape upwardly, clamping plates closely overlying the die to clamp a severed element on the beaded edge of the tape, and cam means to operate said wire feed means and tape feed means and clamping plates in proper timing.

28. Apparatus for the manufacture of slide fasteners having fastener elements with approximately parallel sides and jaws with ends that are approximately perpendicular to the sides, said apparatus comprising means to guide a wire, a punch and die functioning to cut small, triangular pieces of scrap to give the jaws the desired perpendicular ends, and further functioning to sever the wire, said die having a generally key-hole shaped slot for supporting and guiding an upwardly fed tape having a beaded edge, said die further having a convex cutting portion shaped to conform to the head of the element

being severed, said die further comprising two pointed or triangular-shaped pieces for cutting triangular notches in the side edges of the wire, said die further comprising a depressible spring pad fitting within and mating with said convex cutting portion and triangular cutting portions, said pad lifting the wire clear of the die for forward feed, said punch having a concave side mating with the aforesaid convex die portion, said punch further having triangularly grooved channels in the sides mating with the aforesaid triangular die portions, the arrangement being such that, when the punch descends, it severs the wire from an element supported on the stationary die portion at the end of the wire, and further severs the wire from two triangular pieces of scrap supported on the aforesaid triangular die portions, the element and scrap being left stationary on the die while the wire is punched downwardly away from the same, the outline of the punch and die being such that the severed piece constitutes a fastener element.

29. Apparatus for the manufacture of slide fasteners having fastener elements with approximately parallel sides and jaws with ends that are approximately perpendicular to the sides, said apparatus comprising means to guide a wire, punch and die mechanism functioning to cut small triangular shaped pieces of metal from the side of the wire, and further functioning to sever the wire, said die having a generally key-hole shaped slot for supporting and guiding an upwardly fed tape having a beaded edge, said die further having a convex cutting portion shaped to conform to the head of the element being severed, said die further comprising two pointed or triangular shaped side pieces for cutting notches in the side edges of the wire, said die further comprising a depressible spring pad fitting within and mating with said convex cutting portion and triangular cutting portions, said pad lifting the wire clear of the die for forward feed, said punch having a concave side mating with the aforesaid convex die portion, said punch further having triangularly grooved channels in the sides mating with the aforesaid triangular portions, the arrangement being such that, when the punch descends, it severs the wire from an element supported on the stationary die portion at the end of the wire, and further severs the wire from two triangular pieces of scrap supported on the aforesaid triangular die portions, the element and scrap being left stationary on the die while the wire is punched downwardly away from the same, the outline of the severing punch being such that the severed piece constitutes a fastener element having a head with spread jaws, the head being of such dimension as to fill the space between the jaws, and said jaws having the aforesaid approximately perpendicular ends of such dimension that when the jaws are closed their sides are substantially parallel, air-flow means for moving said small triangular pieces of scrap outwardly from the triangular die portions, and feed means to intermittently feed the wire to the punch and die, each of the repeated feed distances equalling only a small fraction of the length of an element.

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DEFENDANT'S EXHIBIT "BI"

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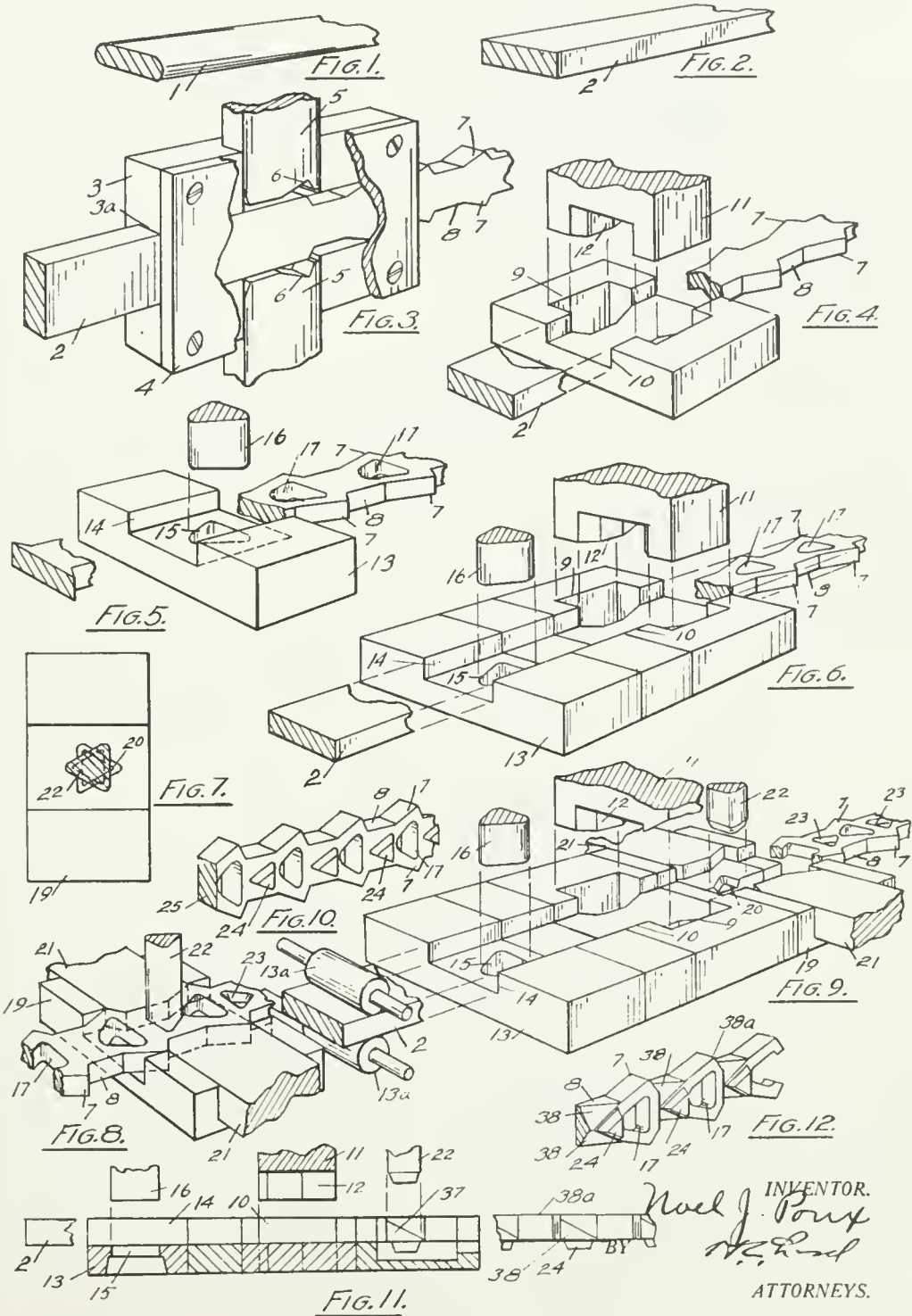
Aug. 8, 1939

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2,169,176

METHOD OF MAKING SEPARABLE FASTENERS

Original Filed Dec. 16, 1933 7 Sheets-Sheet 1



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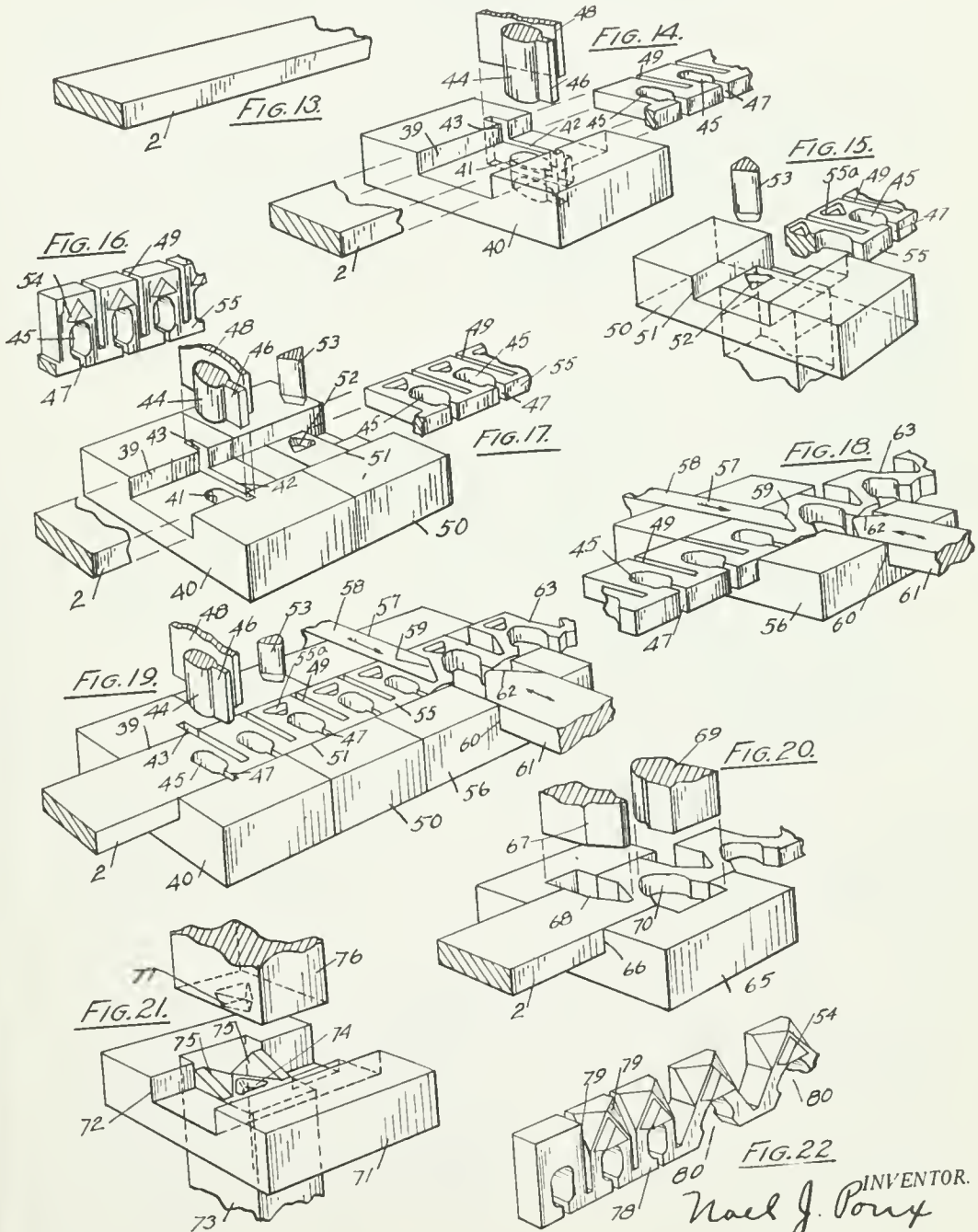


Aug. 8, 1939

N. J. POUX
METHOD OF MAKING SEPARABLE FASTENERS

2,169,176

Original Filed Dec. 16, 1933 7 Sheets-Sheet 2



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N J POUX

2,169,176

METHOD OF MAKING SEPARABLE FASTENERS

Original Filed Dec. 16, 1933 7 Sheets-Sheet 3

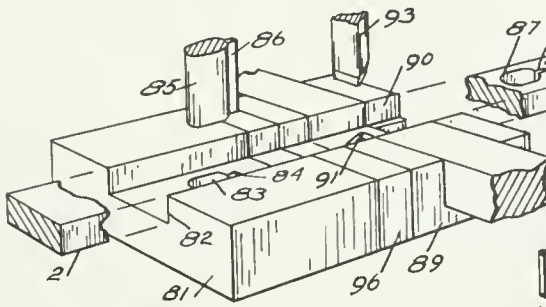
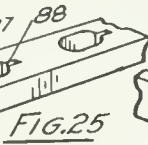
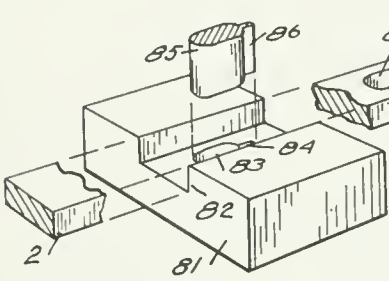
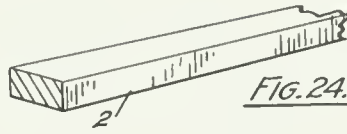
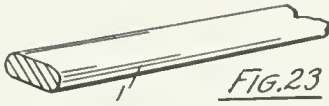


FIG. 27.

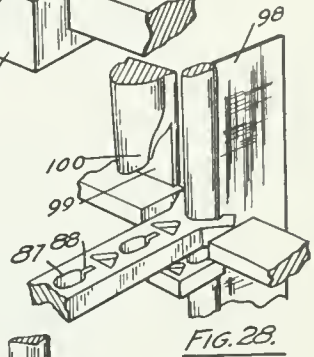


FIG. 28.

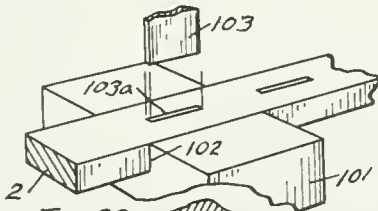


FIG. 29.

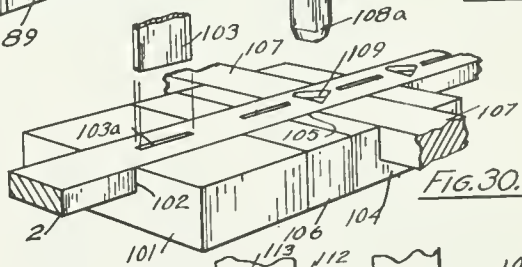


FIG. 30.

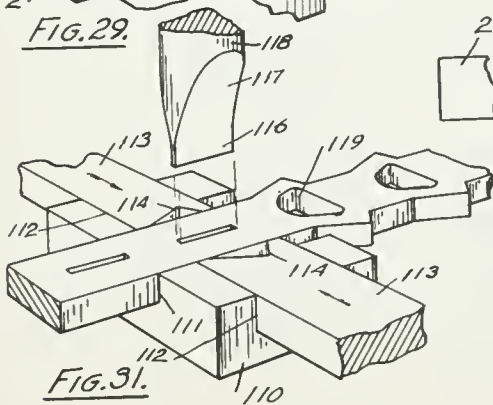


FIG. 31.

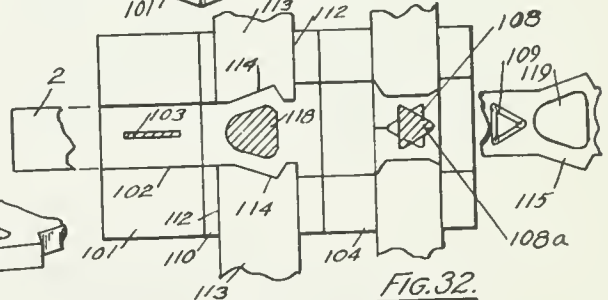


FIG. 32.

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METHOD OF MAKING SEPARABLE FASTENERS

Original Filed Dec. 16, 1933 7 Sheets-Sheet 4

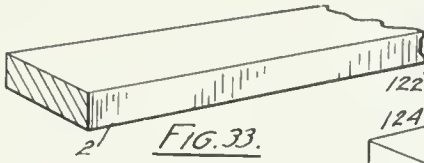


FIG. 33.

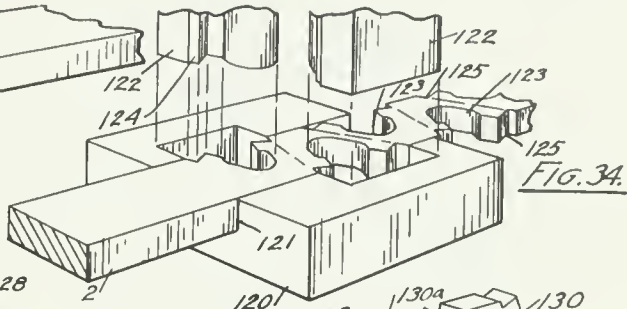


FIG. 34.

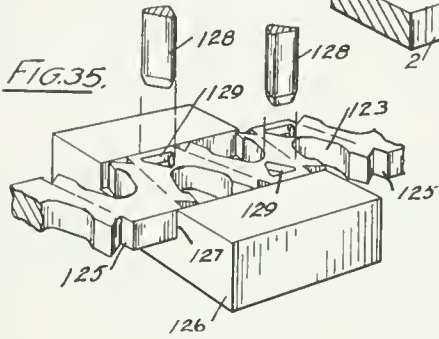


FIG. 35.

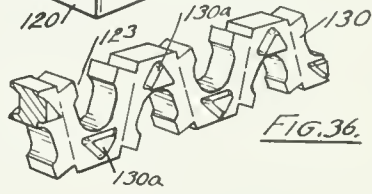


FIG. 36.

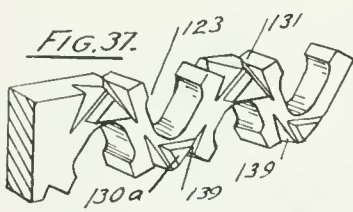


FIG. 37.

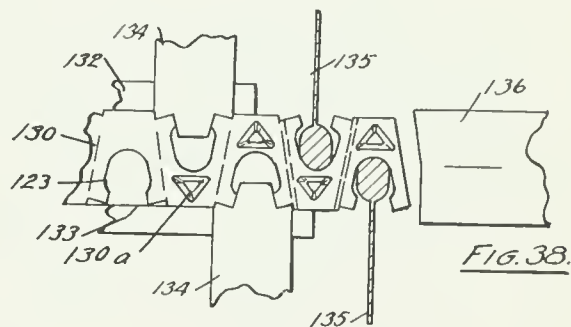


FIG. 38.

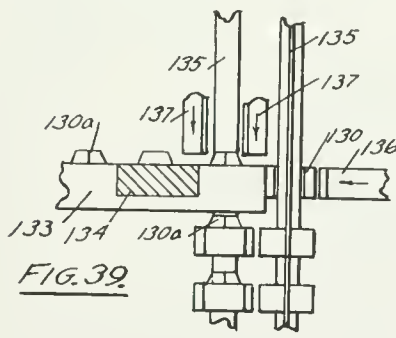


FIG. 39.

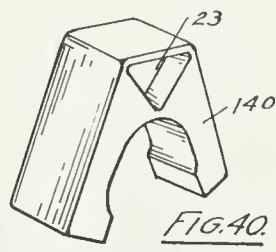


FIG. 40.

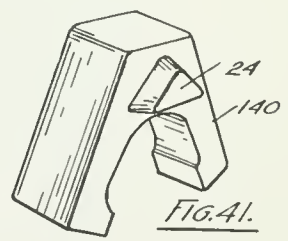


FIG. 41.

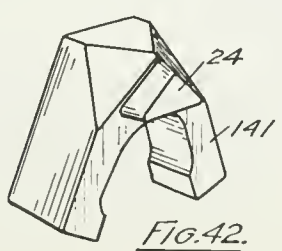


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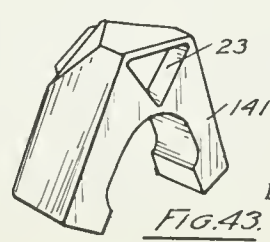


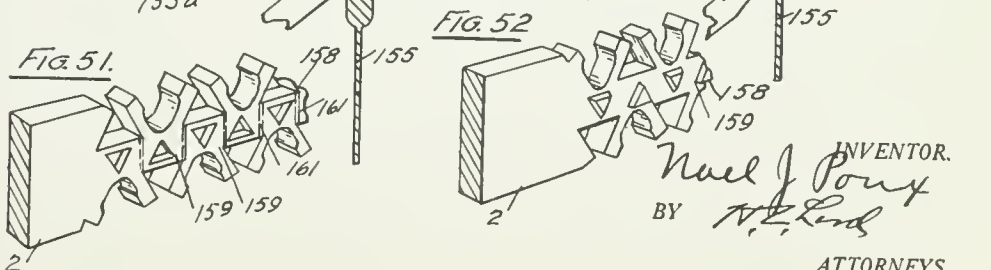
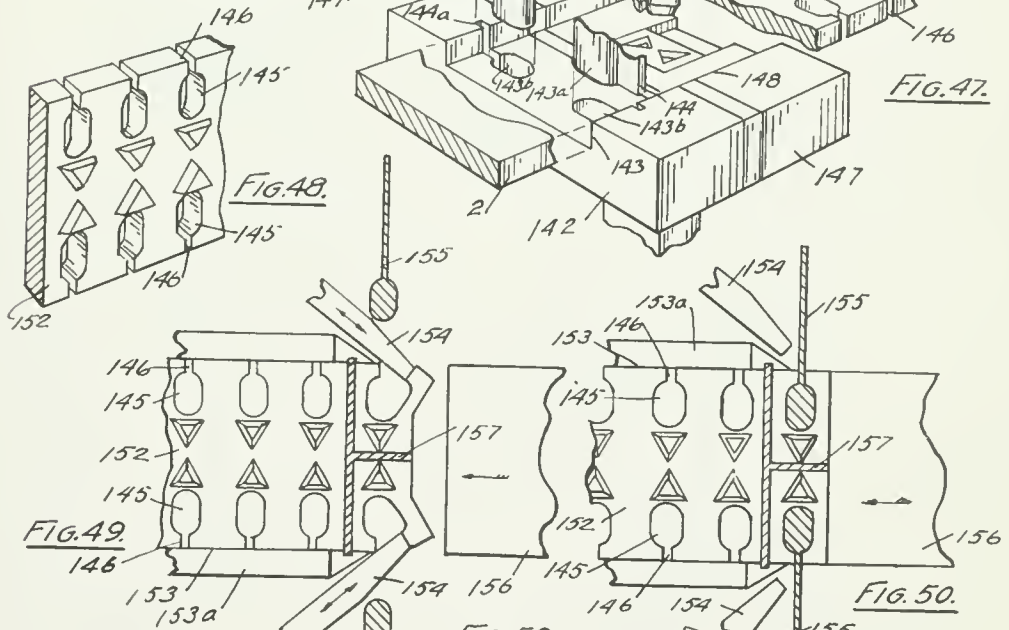
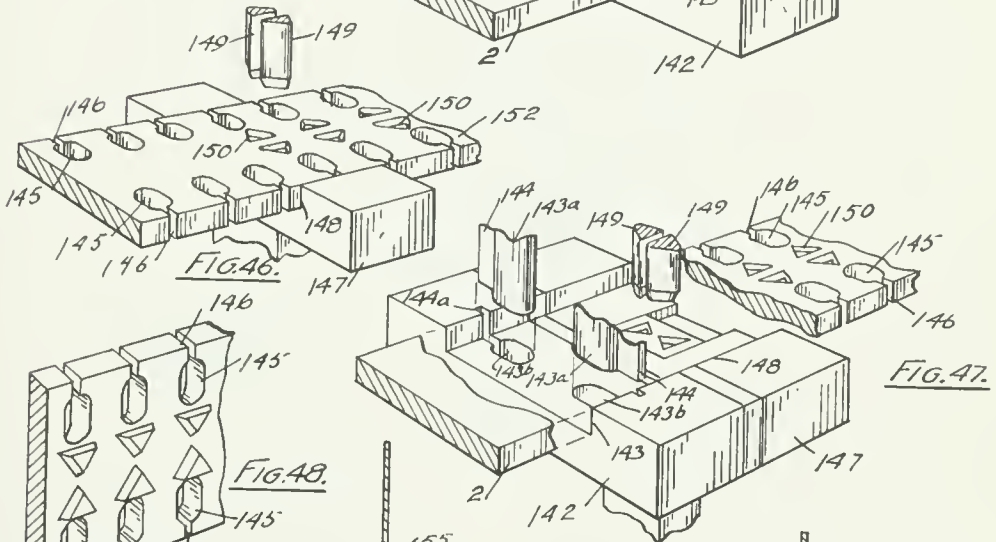
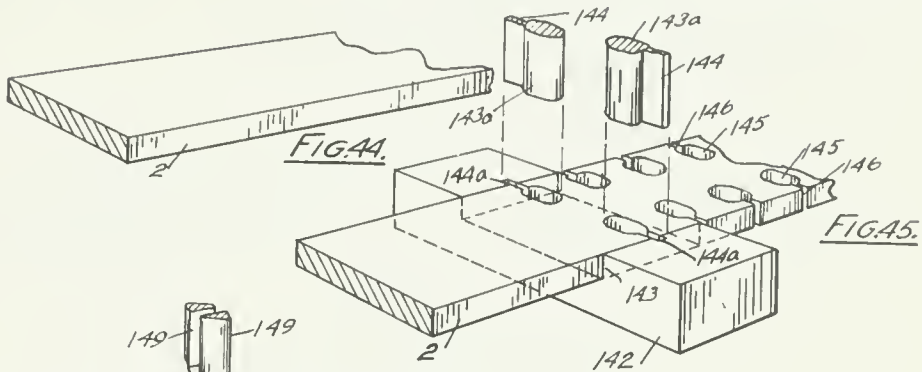
FIG. 43.

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METHOD OF MAKING SEPARABLE FASTENERS

Original Filed Dec. 16, 1933 7 Sheets-Sheet 5



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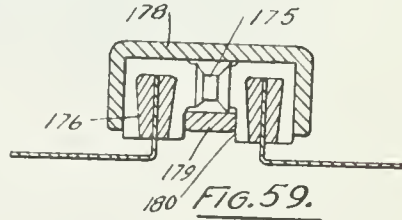
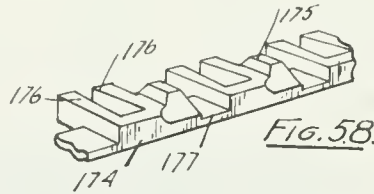
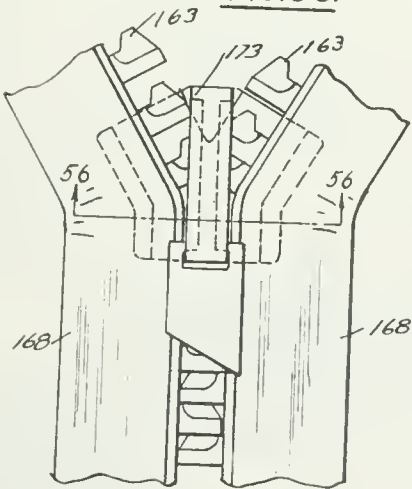
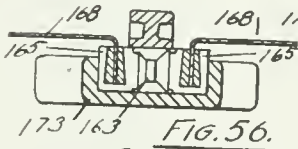
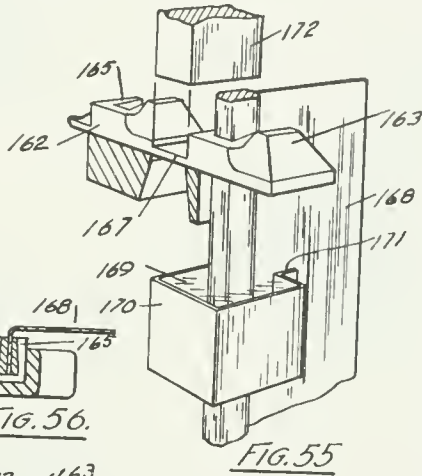
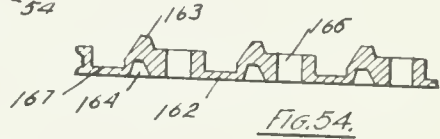
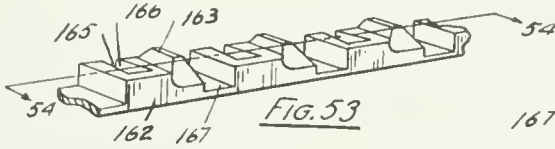
Aug. 8, 1939

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2,169,176

METHOD OF MAKING SEPARABLE FASTENERS

Original Filed Dec. 16, 1933 7 Sheets-Sheet 6



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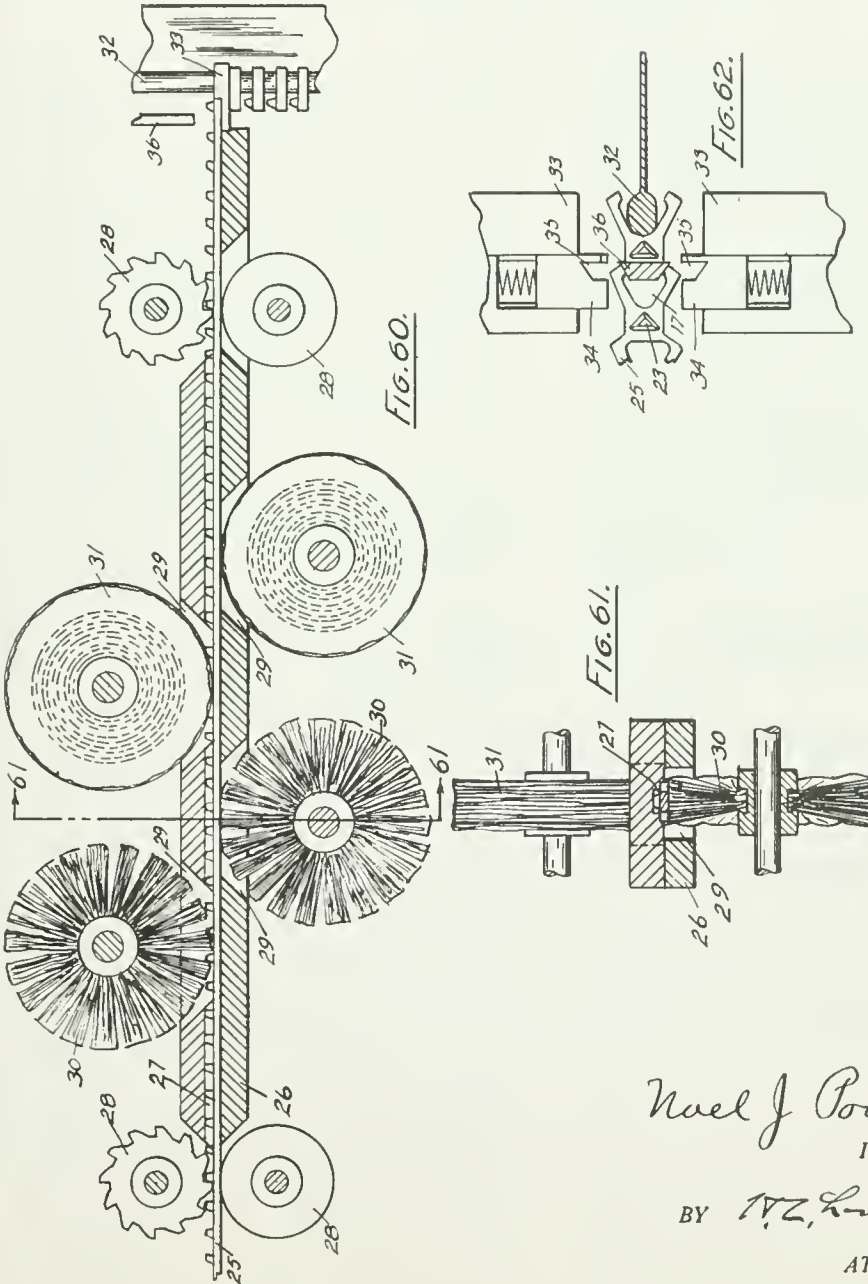
Aug. 8, 1939

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2,169,176

METHOD OF MAKING SEPARABLE FASTENERS

Original Filed Dec. 16, 1933 7 Sheets-Sheet 7



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UNITED STATES PATENT OFFICE

2,169,176

METHOD OF MAKING SEPARABLE FASTENERS

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Talon, Inc., Meadville, Pa., a corporation of
Pennsylvania

Application December 16, 1933, Serial No. 702,766
Renewed February 10, 1939

21 Claims. (Cl. 29—148)

This invention relates to separable fasteners of the zipper type and particularly to methods of making the interlocking elements and attaching them to the tapes.

It is among the objects of the invention to provide simple and inexpensive processes of forming interlocking elements and attaching them to the tapes, particularly to provide an improved process of manufacture in which a series of interlocking elements is formed as a continuous strip, to minimize and reduce the amount of scrap, and to provide an improved method in which the interlocking elements may be smoothed or otherwise processed during their manufacture.

Other objects and advantages of the invention will be apparent from the following description and accompanying drawings.

In the manufacture of separable fasteners one of the problems encountered is the forming and making of the individual interlocking members in a manner that permits of their simple and easy fabrication, and a convenient manner and apparatus for polishing and finishing the surfaces of the members and attaching the same to the tape. In the present invention I accomplish this by a very effective method and with simple apparatus for forming the individual members practically complete in a continuous strip of metal, or material from which the members are made without severing one member from another. In this way it is possible to form the members rapidly, to hold them after such formation in considerable quantities and in small space, if desired, run the strips in which the members are formed through such cleaning and polishing operations as may be desirable and then attach them to the tape and sever them from the strip. This general plan may be practiced in numerous ways. The individual members may be formed by coining, or stamping, and may be arranged in their formation lengthwise of the strip, crosswise of the strip, or in double rows. The jaws may be stamped to their open position from metal of sufficient area to supply the material, or they may be stamped, or formed with jaws in substantially closed position and forced open. These and other features and details of the invention will appear more fully from the specification and claims.

A preferred embodiment of the invention is illustrated in the accompanying drawings as follows:—

Fig. 1 shows a perspective view of a metal bar, or strip, having rounded corners from which the members may be fabricated.

Fig. 2 a similar strip having square corners.

Fig. 3 a perspective view of a strip coining or forging die coining the edges of the strip.

Fig. 4 a perspective view of a stamping or cutting die stamping the exterior edges of a strip.

Fig. 5 a perspective view of a die for punching the material from between the jaws.

Fig. 6 a stamp combining the dies of Figs. 4 and 5.

Fig. 7 a plan of a punch and die forming the recess and projection of the interlocking element.

Fig. 8 a perspective view of the die and punch forming the projection and recess.

Fig. 9 a press combining the dies of Figs. 6 and 8.

Fig. 10 a perspective view of a finished strip showing the projection side, the recess side being shown at the end of Fig. 9.

Fig. 11 shows a sectional view of the die adapted to form inclines on the members at the sides of the projections.

Fig. 12 a perspective view of a strip having the inclined sides.

In the strip so far made the members are arranged end to end and the jaws are formed initially in an open position.

Figs. 13 to 22 illustrate apparatus and means for forming the strips with the members crosswise thereof.

Fig. 13 is a perspective view of the strip blank.

Fig. 14 a perspective view of a punch press for punching the jaw slots and separating slots for the members.

Fig. 15 a perspective view of a press for forming the recesses and projections on the strip.

Fig. 16 a view indicating the completed strip as it comes from the press shown in Fig. 15.

Fig. 17 shows the press with the dies of Figs. 14 and 15 combined.

Fig. 18 a manner of spreading the jaws from a strip as it comes from the dies of Fig. 14.

Fig. 19 a similar apparatus for spreading the jaws from a strip as it comes from the dies shown in Fig. 15.

Fig. 20 illustrates a press in which the jaws and separating slots are formed in their open position.

Fig. 21 a perspective view of a die for forming the inclined sides on the members of a strip.

Fig. 22 a strip showing the inclined sides formed thereon and the formation of the jaws as they are spread.

In the method and apparatus illustrated in Figs. 23 to 32 inclusive the members are arranged end to end in the strip, but the jaws are formed initially close together and spread.

Figs. 23 and 24 show perspective views of the blank strips.

Fig. 25 a press for forming jaw slots in the strip.

5 Fig. 26 a press for forming the projections and recesses in the strip.

Fig. 27 the presses of Figs. 25 and 26 combined.

10 Fig. 28 an apparatus for spreading the jaws of a formed member, attaching the member to a tape, and cutting the attached member from the strip.

Fig. 29 a press making the first step in an alternative method forming an initial slit.

15 Fig. 30 a press having dies forming a recess and projection, these dies being combined with the dies of Fig. 29.

Fig. 31 a perspective view of the dies for spreading the jaws.

20 Fig. 32 the dies of Figs. 30 and 31 combined.

In the apparatus and method and strip shown in Figs. 33 to 39 strips with crosswise members are shown and the method of forming the same.

Fig. 33 shows a perspective view of the blank.

25 Fig. 34 dies cutting jaw slots in each edge of the strip.

Fig. 35 dies forming recesses and projections at opposite edges.

30 Fig. 36 a perspective view of the strip as it comes from the dies in Fig. 35.

Fig. 37 a perspective view of a strip having the incline added thereto.

Fig. 38 a plan view of the part of the apparatus for attaching the strip to a tape.

35 Fig. 39 an elevation of the same.

Figs. 40 and 41 perspective views of the finished members with straight sides.

Figs. 42 and 43 perspective views of the members with inclined sides.

40 The apparatus and methods shown in Figs. 44 to 52 illustrate a manner of forming strips with the members arranged crosswise of the strip and projecting from opposite sides thereof.

Fig. 44 shows a perspective view of the blank.

45 Fig. 45 dies for punching the jaw slots.

Fig. 46 a press for forming the projections and recesses.

Fig. 47 a combined press having the dies of Figs. 43 and 44 combined.

50 Fig. 48 a perspective view of the completed strip.

Fig. 49 a plan view showing a method of opening the jaws for receiving a tape.

55 Fig. 50 a plan view showing the method with the jaws closed on the tape and ready to be severed.

Figs. 51 and 52 alternative constructions of strips.

60 Fig. 53 shows a perspective view of a strip for making an alternative form of fastener.

Fig. 54 a central section of the same on the line 54—54 in Fig. 53.

Fig. 55 shows a perspective view of the apparatus for attaching the same to a tape.

65 Fig. 56 a sectional view of the completed fastener and slider.

Fig. 57 a plan view of the slider on the fastener.

Fig. 58 an alternative form of strip.

70 Fig. 59 a sectional view through the slider of the fastener formed from the strip of Fig. 58.

Fig. 60 shows a device for polishing and assembling fasteners.

Fig. 61 a section on line 61—61 Fig. 60.

75 Fig. 62 a plan view of jaw closing devices.

It will be noted that through the several figures dies are formed for individual operations and are ganged for progressively forming operations. These arrangements are made readily possible in that the strips are retained intact so that they can readily be run through separate machines, or machines that perform the several operations in one machine.

1 marks the strip blank with rounded edges, and 2 a strip blank having straight edges. In the structure shown in Fig. 3, 3 marks the die. This has a strip guide 3a and a cover plate 4. Side dies 5 are brought into clamping engagement with the edges of the strip by any convenient mechanism (not shown) and these are provided with recesses 6 into which the material may be forced outlining the outer edges of the spread jaws of a member.

20 The strip may be formed with this relation of edges by stamping, as illustrated in Fig. 4, the die 3 having a strip guide 10, a punch 11 having die faces 12 adapted to cut out the part between the jaw incline 7 forming the interlocking part 8 of the members.

25 The strip formed in either of the manners described may have the jaw slots punched, as shown in Fig. 5. A die 13 has a strip guide 14. The base of the guide has a cutting opening 15 and a punch 16 operates over the die to cut jaw slots 17.

30 The dies 9 and 13 may be arranged in tandem so that the slots 17 and edge formation may be accomplished in one operation.

35 The recesses and projections are formed in the faces of the strips and this may be accomplished as indicated in Fig. 8. A die block 19 has a strip slot 19a in the bottom of which is a recess 20 for forming a projection 24. Side dies 21 engage the side edges of the strip and a punch 22 forms a recess 23 in the strip.

40 In Fig. 9 the die 19 is associated with the die blocks 9 and 13 so that the three operations may be accomplished in one pass of the strip. Feeding rolls 13a are arranged to advance the strip through the dies and these may be provided with any well-known control mechanism to advance the strip in proper timing. It will be understood that with each of the die grooves in which the strips are advanced a similar set of feeding rolls is ordinarily to be provided.

45 The completed strip having the edges and jaw slots and projections and recesses formed thereon and therein is illustrated in Fig. 10. This strip may be readily processed and attached to a tape, as indicated in Fig. 60.

50 A guide table 26 has a guide slot 27 for feeding the strip 25. Rolls 28 are arranged at each end of the table for accomplishing a definite forward feed, the upper feed rolls 28 being notched to engage the projections. The table 26 has openings 29 above and below at intervals leading to the guide slot 27 and wire brushes 30 operate in these openings on the strip as it passes out. Buffers 31 operate through succeeding openings so that the strip may be readily processed as it advances. The strip after this polishing operation may be again rolled and stored, or it may be directly attached to the tape 32 from this operation. The end of the strip with its jaws carried straddle the tape is closed by pressure fingers 33. As the pressure fingers close die plates 34 are carried under the strip between the first and last members and these dies have die slots 35. A cutter 36 severs the last member from the strip, the cutter op- 75

erating in connection with the slots 36. In some constructions it is desirable to incline the front corners of the members and this is accomplished by arranging an inclined die face 37 on the side die members 21 (see Fig. 11). This provides the inclines 38 as shown in the strip 38a (Fig. 12).

In forming the strips with the members crosswise (Fig. 13 and immediately following) the strip blank 2 is fed into a guide groove 39 of the die block 40. This die block has a die opening 41 and slots 42 and 43 which operate with a punch 44 for forming a jaw slot 45, and an extension 46 on the punch for forming a slot extension 47 of the die slot. There is provided a separation punch 48 for cutting a separation slot 49 which nearly severs the strip between a member. The strip may then be run through the dies shown in Fig. 15 having a die block 50 and a feed groove 51. The dies have a recess 52, a punch 53 for forming a projection 54 and recess 55a respectively forming as it comes from the dies a strip 55. If desired the die blocks 40 and 50 may be placed in tandem, as shown in Fig. 17, and the strip formed in one continuous operation. The completed strip, is shown in perspective in Fig. 16. The completed strip is run through die blocks 56. This die block has a transverse guide groove 57 in which a spreader punch 58 operates. The spreader punch has a cam surface 59 corresponding to the desired outer slant of the member jaw with the jaw in open condition. An opposite transverse guide slot 60 is also provided in the block 56 and this has a spreader punch 61 with a cam surface 62. As the strip is advanced, the punch 58 advances and spreads one side of the jaw of a member and while the member is held by the punch 58 the punch 61 advances and spreads the opposite jaw, thus forming an ultimate strip 63 with the jaws spread. If desired the die 56 may be arranged in tandem and with the die blocks 40 and 50 and the whole operation is completed in one progressive operation. The strip may be formed by a stamping operation in which the jaws are formed initially in spread position and such a manner of forming is indicated in Fig. 20. A die block 65 has a die groove 66. Punches 67 form slots 68 between the members and punches 69 a jaw slot 70. It may be desirable also to provide the front corners of the members with inclined surfaces and this is accomplished in the die scheme shown in Fig. 21 where'n a die block 71 has a die groove 72. A punch 73 is arranged through the bottom of the block 71 and in the face of the punch 73 there is provided a recess 74 for forming the projection 54 on the member and there are also formed on the face of the punch inclined surfaces 75. A punch 76 has a flat face of sufficient area to force the portion of the strip containing the member into coining relation to the inclined surfaces and recess. At the same time the punch 76 is provided with recess forming projections 77. Thus the strip 78 as it comes from the die 71 has inclined ends 79. The die block 71 may be substituted for the die block 60 in the die arrangements of Figs. 17 and 19 and consequently form a strip with jaw slots 80 open, as shown in Fig. 22.

The strips and apparatus for forming the same shown in Figs. 23 and following use the same bar blanks 1, or 2, as in the preceding structures. A die block 81 (Fig. 25) has a guide groove 82 through which the strip is fed and this has a jaw slot opening 83 with an extension 84 adapted

to operate with a punch 85 and its extension 86 forming in the strip a jaw slot 87 with its separating extension 88. The strip so formed may be fed through a die block 89, the die block having a die groove 90 in the bottom of which is formed a recess 91 for forming a member projection 92. A punch 93 operates on the strip to form a recess 94. The die blocks 81 and 89 may be associated, as shown in Fig. 21, with a spacer block 95 between them in which event these operations may be performed progressively. This strip is presented with its forward end to a tape 98. The end member has its jaws closed on the tape by punches, such as 33, shown in Fig. 55. The member is severed by a cutter 99 corresponding to the cutter 36. Arranged on the cutter 99 is a jaw opening 100 which with the continued advance of the cutter 99 spreads the jaws of the next to the last member so as to prepare the jaws to receive the tape.

This manner of forming the members without great waste of material may be accomplished also in the manner illustrated in Figs. 29 and immediately following. In Fig. 29 a die block 101 has a die groove 102. A punch 103 forms longitudinal slots 103a. The strip is carried through a die block 104 having a die groove 105. This may be associated with the die block 101 properly spaced by spacers 106. Side punches 107 are arranged in the die block 104 to properly hold the strip as the member projections and recesses are formed, the projection being formed in the recesses 108 by a punch 100a. The strip may be run through a block 110 with a die groove 111. Side punches 113 operate in transverse grooves 112. These side punches have recesses 114 adapted to receive metal forming the outer edge of the jaws. A punch 116 is shaped to enter the slot 103. The punch has an inclined spreading surface 117 terminating in a cross sectional shape 118 desired for the jaw slot 119. This jaw spreading may take place, if desired, before or after, the forming of the projections and recesses.

In Fig. 32 the dies using the block 101, the block 110 and the block 104 are associated so that the strip 115 as a whole may be fabricated in one progressive operation.

In Figs. 33 to 38 a desirable method of forming interlocking members in strips is shown. A guide block 120 has a die groove 121 receiving the strip blank 2. Punches 122 form oppositely placed and staggered jaw slots 123 in the strip. The edge of the strip is notched by a projection 124 on the punch at 125 to form the outer edges of the jaws. A die block 126 has a die guide 127 (see Fig. 35) through which the strip coming from the block 120 is passed and punches 128 operate on the strip to form recesses 129 and the opposite projections 130a in the manner of the preceding operations. The blocks 120 and 126 may be placed in tandem, if desired.

A finished strip 130 may be attached to a tape in the manner indicated in Figs. 38 and 39. A guide block 132 has a guide groove 133 and a clamping plunger 134 engages the strip intermittently as it is fed forward. Tapes 135 are placed in the jaw slots of the two end members. A punch 136 engages the end of the strip and closes the jaws of the two members. Cutters 137 sever the members so attached to the tape 70 on the lines 138. If desired, the strip may have inclined front corners formed in it at 139 by coining, or otherwise, as desired.

In Figs. 40 and 41 individual interlocking members 140 are shown having the recesses 23 and

projections 24, these members being without the inclined front corners and in Figs. 42 and 43 individual interlocking members 141 are shown in which the front corners are inclined.

In Figs. 44 and following is shown an alternative apparatus and method for forming and attaching members from the strips. In this as in the others the strip blank 2 is used. A die block 142 has a die groove 143 through which the strip blank is fed. Punches 143a have punch extensions 144 forming jaw slots 145 with extensions 146 in the opposite sides of the strip and these are arranged directly opposite each other, the die block having openings 143b and 144a corresponding to the punch structure. The die block 147 has a die groove 148. Punches 149 form recesses 150 in the die groove forming the projections. The finished strip 152, therefore, has the interlocking projections and recesses and the jaw slots. If desired, the die blocks 142 and 147 may be set in tandem so that these operations may be performed in a continuous manner. The strip 152 is passed through a guide groove 153 in a guide block 153a and the jaws at the end of the strip are opened by punches 154. Tapes 155 are introduced into the slots and the jaws closed by a punch 156. As soon as the jaws are closed the end members are severed from each other and from the strip by a cutter 157.

In Figs. 51 and 52 an alternative form of strip 158 is shown. In this the interlocking portions of the members 159 have jaws 160 staggered and directed to opposite sides of the strip. The interlocking portions of the members 159 are in alignment at the center of the strip. The members are severed on the line 161.

In Figs. 53 to 59 are shown strips for interlocking members having jaws which may be attached by adhesion and for forming fasteners with the jaws extending toward one side or the other of the fastener instead of edgewise. In Fig. 53 a strip 162 is shown having projections 163 and recesses 164, these being of the common shape found in interlocking members of separable fasteners. The fastening jaws 165 provide a jaw slot 166 which extends edgewise instead of endwise of the member and crosswise instead of edgewise of the completed fastener. These strips have grooves 167, one wall of which forms the front wall of the final member and this forms a part of the strip which can be readily removed for separating the members. In attaching the members a tape 168 is drawn through a cementing material 169 carried by a receptacle 170, the tape itself sealing a slot 171 in the receptacle. The tape is introduced into the slot of the end member of the strip and the strip is severed by a punch 172 in the groove cutting out the bottom of the groove 167. The cementing material is of sufficient adhesiveness to secure the interlocking member. These interlocking members are operated in a slider 173 in the ordinary manner of interlocking members, the difference being that the slots open toward the same face of the fastener and the tape extends at right angles from the direction of the securing slot. This puts practically the whole fastener on one side of the tape and makes a comparatively smooth surface on the opposite side of the tape.

In Figs. 58 and 59 a slight variation of the strip and member is shown. A strip 174 has projections 175, these projections being of less width than the member. Jaws 176 extend edgewise of the member but are longer than the interlocking

part of the member occupied by the projection. The strip is provided with grooves 177 for severing the strip. A slider 178 operating with the fastener of this type has one of its walls 179 arranged between the overlapping ends of the jaws in a groove 180 formed thereby. In this way the projection portions of the fastener from one face of the member are practically obliterated.

In each of these methods it will be observed there is an elongated strip of united members. This may be secured to the tape in a continuous process, or each of the steps may be readily performed independently as the strips may be readily rolled. The strips while the members are still united may be thoroughly processed, polished and finished, the only final action being the severing of the members and attachment to the tape.

What I claim as new is:

1. The method of forming interlocking members for separable fasteners which consists in shaping the said members while united in a strip, to form a plurality of interlocking members with jaws and then spreading the jaws of the various members while united in the strip through distortion of the material of the members.

2. The method of forming interlocking members for separable fasteners which consists in shaping the said members while united in a strip, to form a plurality of interlocking members crosswise of the strip with crosswise extending jaws and then spreading the jaws while the various members are united in the strip.

3. The method of forming separable fasteners which consists in advancing a strip consisting of a long continuous series of united interlocking members having spread jaws end to end to place its end member in securing relation to a tape, securing the jaws on the tape, and severing the attached member from the strip.

4. The method of forming separable fasteners which consists in advancing a strip of united interlocking members having jaws arranged crosswise of the strip to place its end member in securing relation to a tape, securing the jaws on the tape and severing the attached member from the strip.

5. The method of forming separable fasteners which consists in advancing a strip consisting of a long continuous series of united interlocking members, processing the strip as it is advanced, carrying the advance of the end member into securing relation with a tape, securing the member to a tape, and severing the attached member from the strip.

6. The method of forming interlocking members of separable fasteners which consists in shaping the said members while united in a strip, to form an elongated strip of several united interlocking members in continuous series arranged end to end and oriented in the same direction, that is, the head end of one member being juxtaposed to the jaw end of the next adjacent member.

7. The method of forming interlocking members of separable fasteners which consists in shaping the said members while united in a strip to form an elongated strip of several united interlocking members with the members arranged end to end and with the jaws spread and oriented in the same direction, that is, the head end of one member being juxtaposed to the jaw end of the next adjacent member.

8. The method of forming interlocking members of separable fasteners which consists in shaping an elongated strip of such interlocking

members with jaws arranged cross-wise on the strip, with the jaws of all alternate members reversed as to relation to the edges of the strip.

9. The method of forming interlocking members of separable fasteners which consists of shaping an elongated strip of such interlocking members with jaws arranged cross-wise of the strip and with the jaws spread to receive the tape and with the alternate members having their jaws reversed relatively to the edges of the strip.

10. The method of forming interlocking members of separable fasteners which consists of shaping an elongated strip of interlocking members with jaws arranged cross-wise of the strip and with the jaws spread to receive the tape and with the alternate members having their jaws reversed relatively to the edges of the strip, and severing the strip on lines corresponding to the inclination of the jaws.

11. The method of forming the interlocking members of separable fasteners, which consists of shaping an elongated strip of interlocking members arranged cross-wise of the strip with the jaws of the alternate member in reverse relation and extending from the edges of the strip.

12. The method of forming the interlocking members of separable fasteners, which consists of shaping an elongated strip of interlocking members arranged cross-wise of the strip with the jaws of the alternate members extending from the opposite edges of the strip, and forming projections and recesses in substantial alignment for the alternate members along the strip.

13. The method of forming interlocking members for separable fasteners of the class described, in which each member has a pair of jaws, which includes spreading the jaws by force applied between the jaws and confining the material on the exterior surfaces of the jaws during such spreading action.

14. The method of forming interlocking members for separable fasteners of the class described, such interlocking members having spread-apart jaws, which includes taking a strip whose width is less than the over-all width across the spread-apart jaws, forming slots in the strip, spreading the material apart on opposite sides of each slot to provide spread jaw members united in a strip, and simultaneously confining the sides of the strip during such spreading action.

15. The method of forming slide fastener members comprising forming a strip of slide fastener members each with a head portion on one end and a pair of spread jaws on the other end in which a portion of surplus material integrally joins the head end of each member directly to the inner surfaces of the spread jaws of the next adjacent member in the strip, and punching out said surplus portion to separate the members and complete the inner surfaces of the jaws simultaneously.

16. In the method of making a strip for use in making slide fastener members, forging a continuous strip to form angular projections on opposite sides of the strip outlining the outer edges of the spread jaws of a fastener member with a portion of material between said angular projections sufficient to form one head portion of a fastener member.

17. In the method of making a strip for use in making slide fastener members, forging a continuous strip to form angular projections on opposite sides of the strip outlining the outer edges of the spread jaws of a fastener member, leaving a portion of material between pairs of said angular projections sufficient to form one head portion of a fastener member, and forming series of partially formed fastener members in strip form.

18. In the method of forming a slide fastener member strip providing a strip of material whose width corresponds to the width of the finished fastener element, forming a series of jaws on said strip by spreading the material sidewise from about the middle of the strip with the ends of said spread jaw portions integrally connected to an adjacent portion of the strip of the original width.

19. A strip for use in making slide fastener members of the type having a head portion at one end and a jaw portion at the other end, the members being arranged in the strip in end to end relation and oriented in the same direction, the strip having along its longitudinal central portion a series of equally spaced formed heads each with a projection on one side and a formed recess on the opposite side, the sides of the strip being formed to conform to portions of the outer surfaces of the jaws, each of the heads being integrally joined to the jaw end of the next adjacent member in the strip at the inner portions of such jaws, the ends of the jaws of all members in the strip being at least partially exposed.

20. A strip for use in making slide fastener members of the type having a head portion at one end and a jaw portion at the other end, the members being arranged in the strip in end to end relation and oriented in the same direction, the sides of the strip having angular projections conforming to the outline of the outer surfaces of the spread apart jaws of slide fastener members including not only the sides but also the ends of the jaws, and wherein the head of each member is integrally joined to the jaw end of the next adjacent member at the inner portions of such jaws.

21. A strip for use in making slide fastener members of the type having a head portion at one end and a jaw portion at the other end the members being arranged in the strip in end to end relation and oriented in the same direction, the strip having along its longitudinal central portion a series of equally spaced formed heads each with a projection on one side and a formed recess on the opposite side, the sides of the strip being formed to conform to the portions of the outer surfaces of the jaws, the portions of said strip between said head portions having disposed therein within the last-named surfaces slots conforming to the inner surfaces of the jaws of said fastener members, each of the heads being integrally joined to the jaw end of the next adjacent member in the strip at the inner portions of said jaws, the jaws being at least partially spread and the ends of the jaws of all members in the strip being at least partially exposed.

DEFENDANT'S EXHIBIT "BJ"

W. A. Behrens Patent No. 2,267,783

Filed Dec. 28, 1939

Patented Dec. 30, 1941



APPARATUS FOR MAKING SLIDE FASTENER STRINGERS

Filed Dec. 28, 1939

12 Sheets-Sheet 1

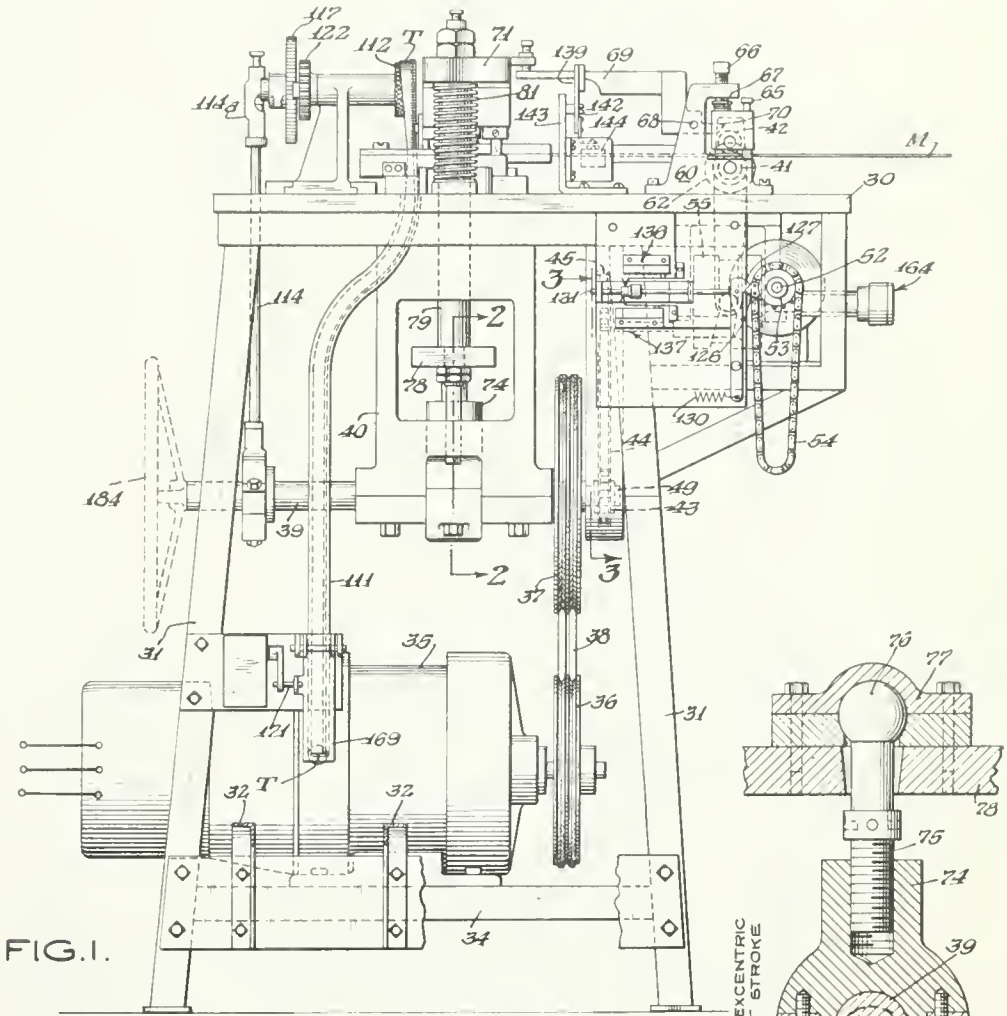


FIG. 1.

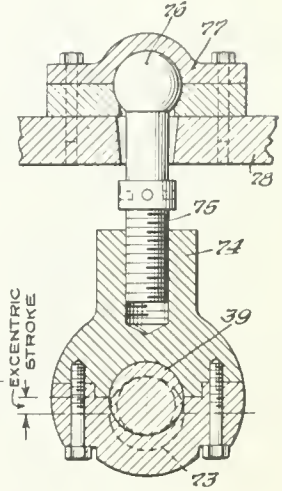


FIG. 2.

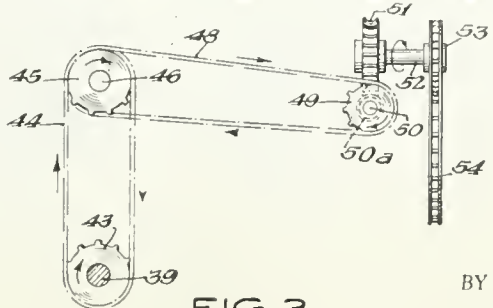


FIG. 3.

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APPARATUS FOR MAKING SLIDE FASTENER STRINGERS

Filed Dec. 28, 1939

12 Sheets-Sheet 2

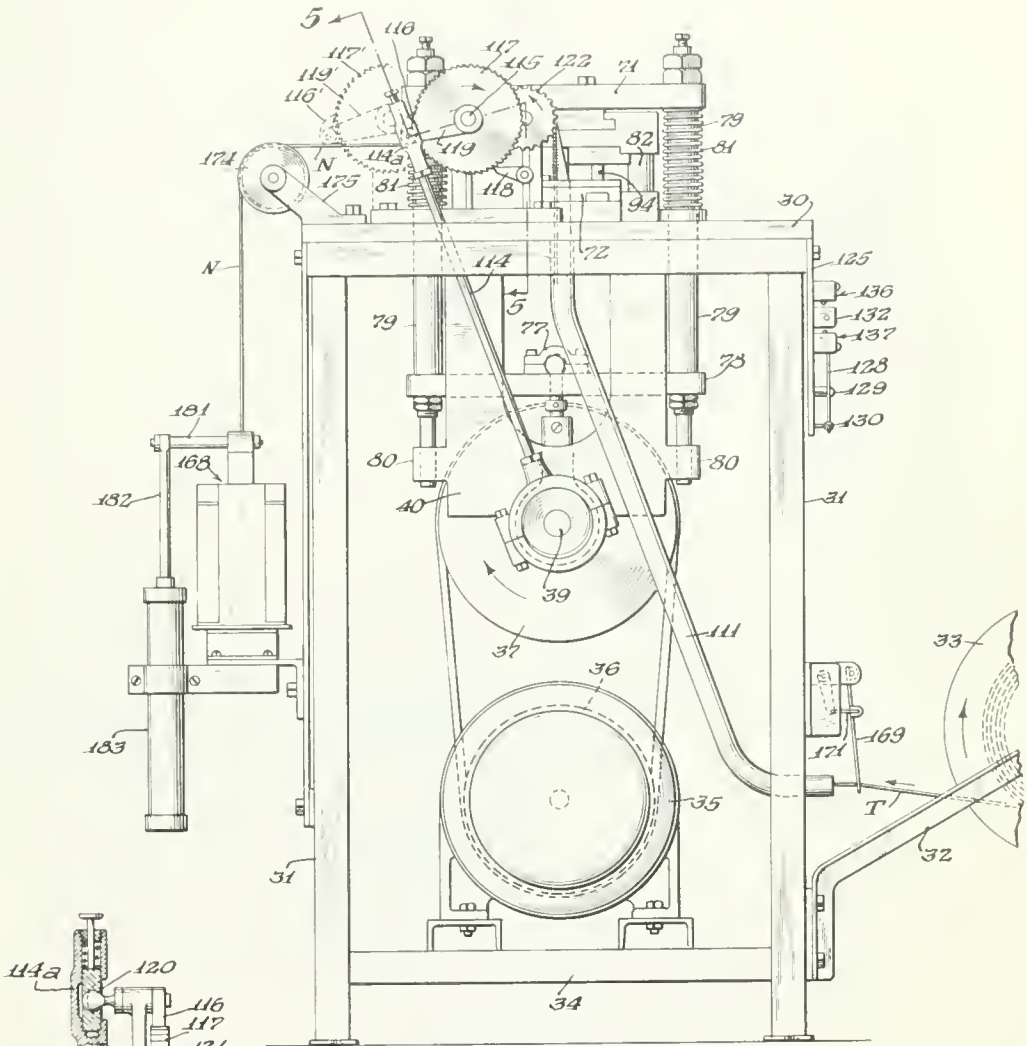


FIG. 4.

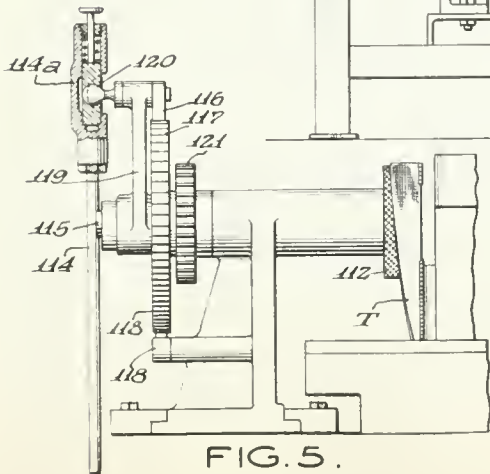


FIG. 5.

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APPARATUS FOR MAKING SLIDE FASTENER STRINGERS

Filed Dec. 28, 1939

12 Sheets—Sheet 3

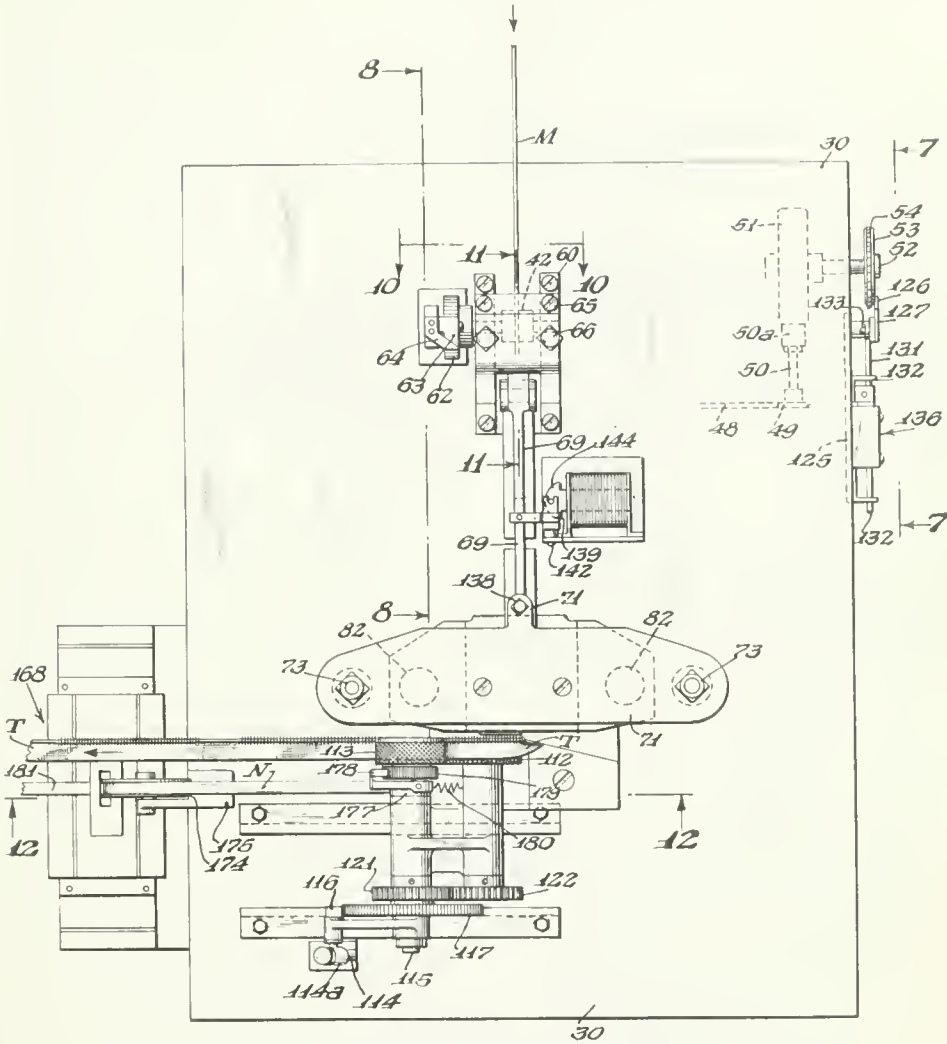


FIG. 6.

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APPARATUS FOR MAKING SLIDE FASTENER STRINGERS

Filed Dec. 28, 1939

12 Sheets-Sheet 4

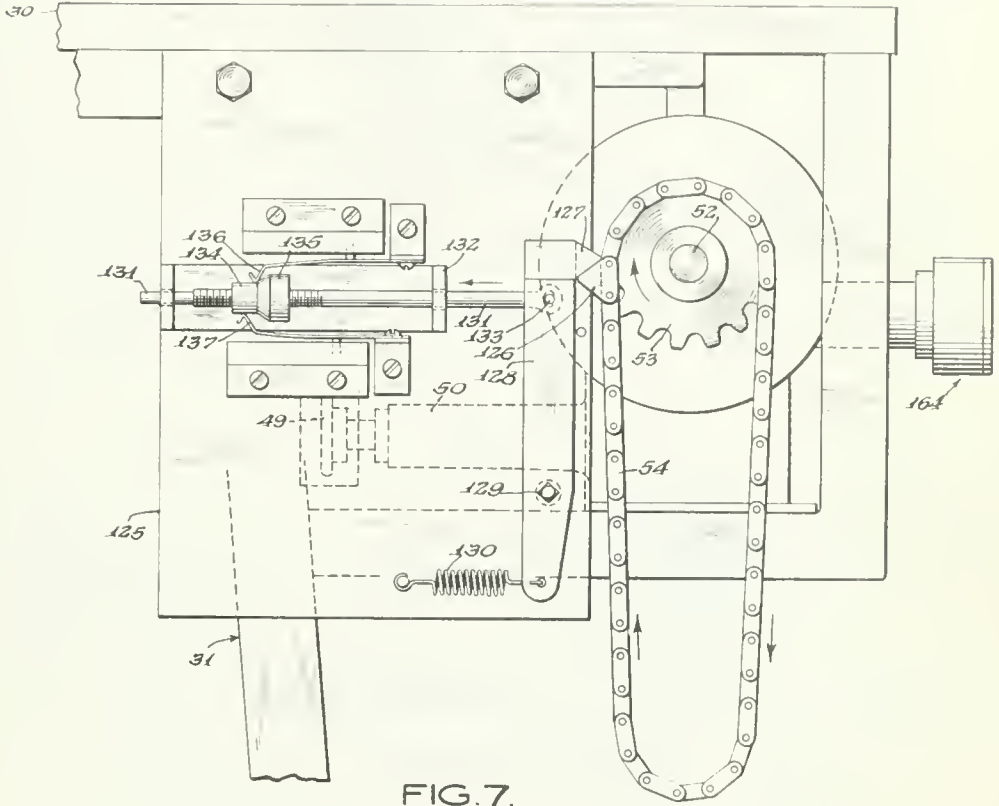


FIG. 7.

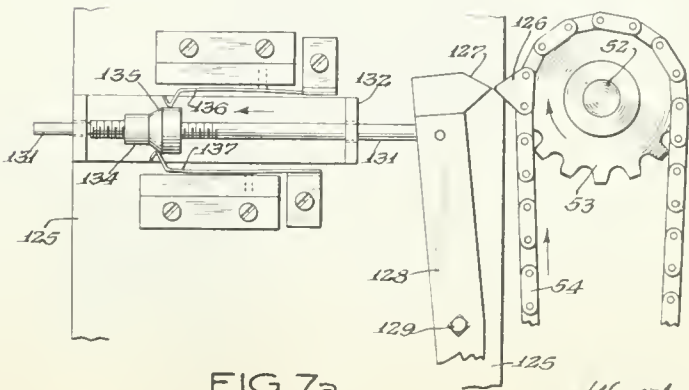


FIG. 7a.

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APPARATUS FOR MAKING SLIDE FASTENER STRINGERS

Filed Dec. 28, 1939

12 Sheets—Sheet 5

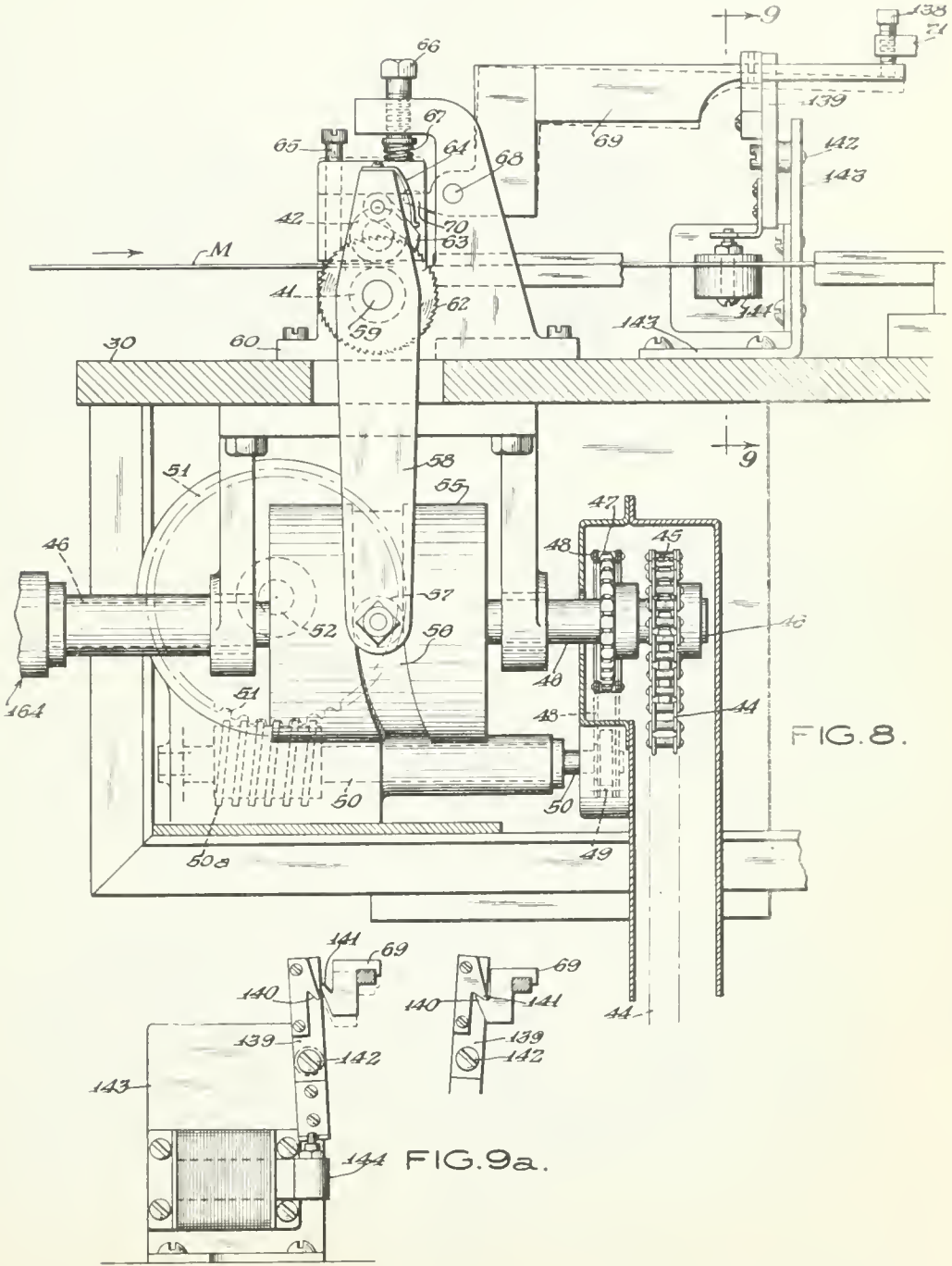


FIG. 8.

FIG. 9.

FIG. 9a.

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APPARATUS FOR MAKING SLIDE FASTENER STRINGERS

Filed Dec. 28, 1939

12 Sheets-Sheet 6

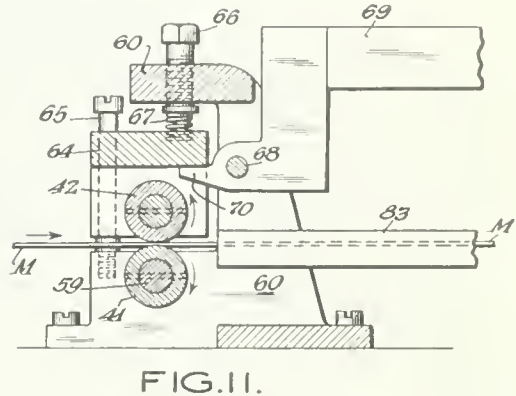
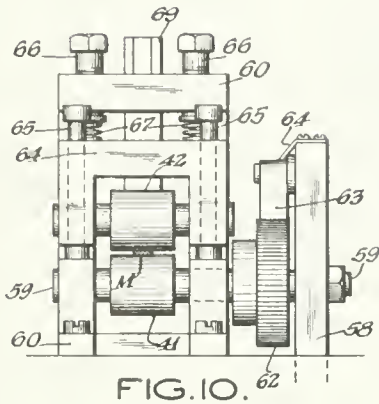


FIG. 10.

FIG. 11.

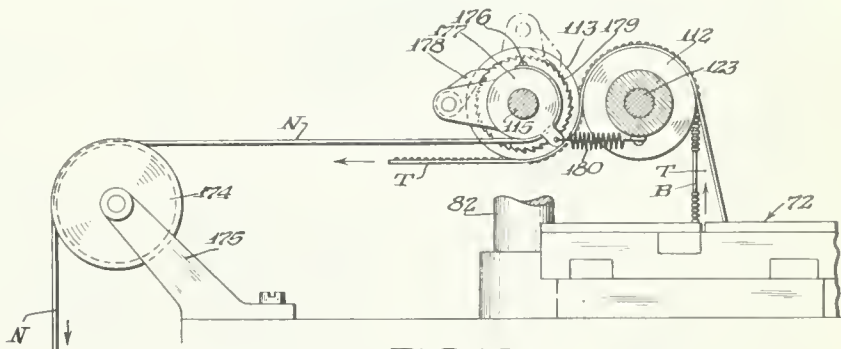


FIG. 12.

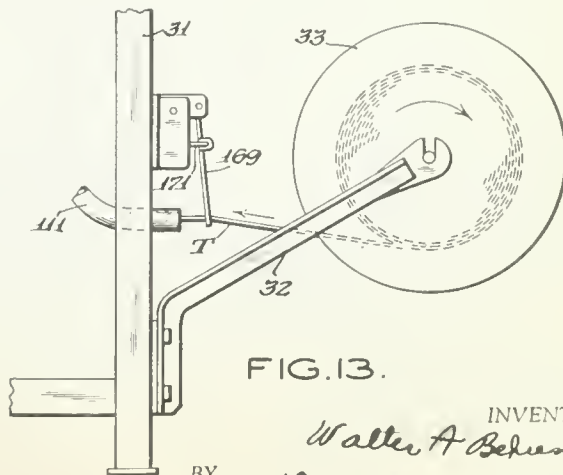
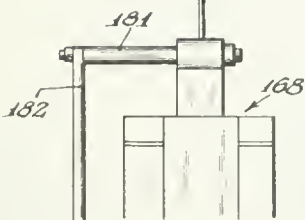


FIG. 13.

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APPARATUS FOR MAKING SLIDE FASTENER STRINGERS

Filed Dec. 28, 1939

12 Sheets—Sheet 7

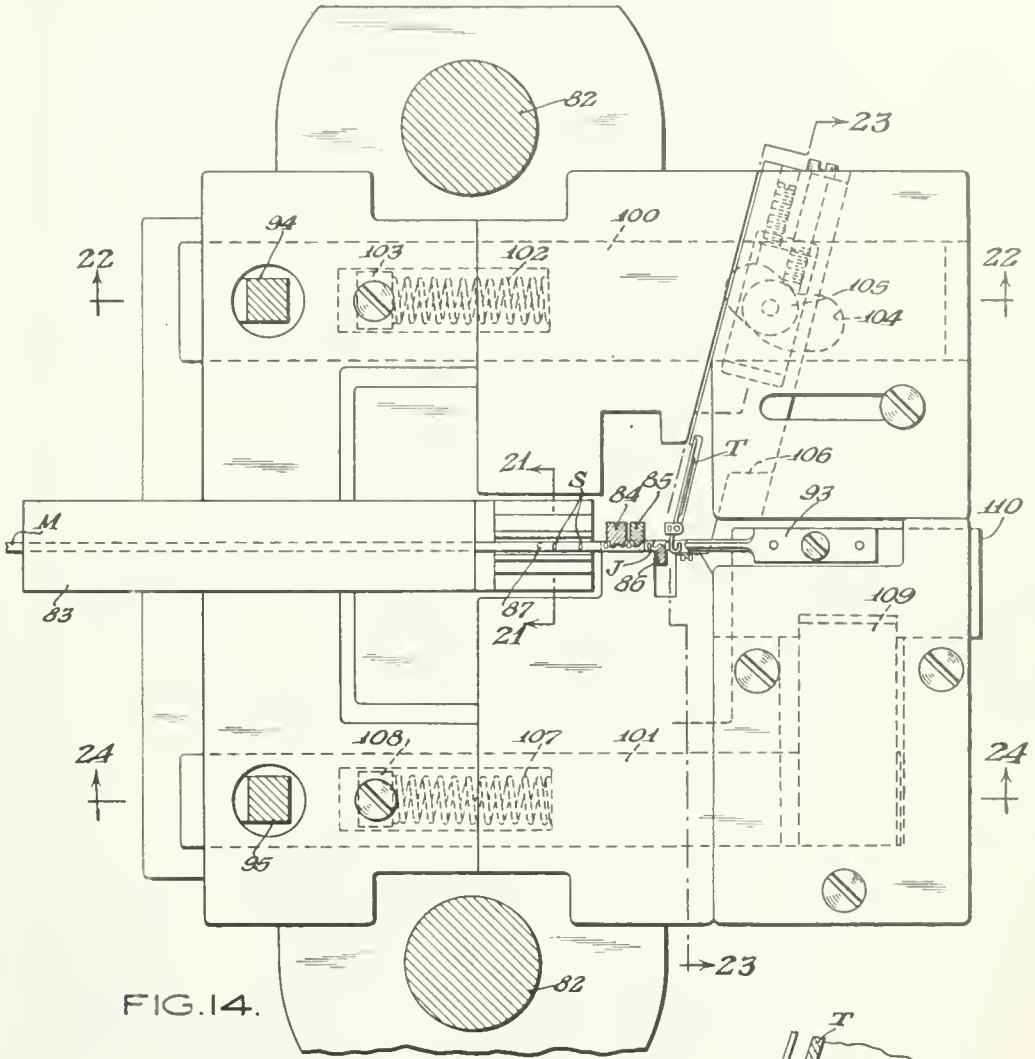


FIG. 14.

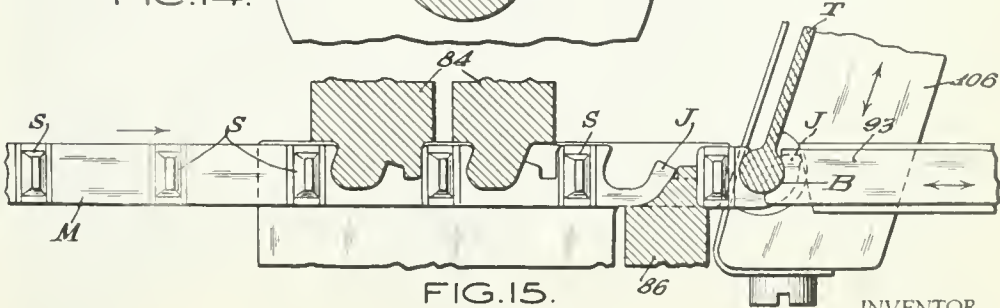


FIG. 15.

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APPARATUS FOR MAKING SLIDE FASTENER STRINGERS

Filed Dec. 28, 1939

12 Sheets-Sheet 8

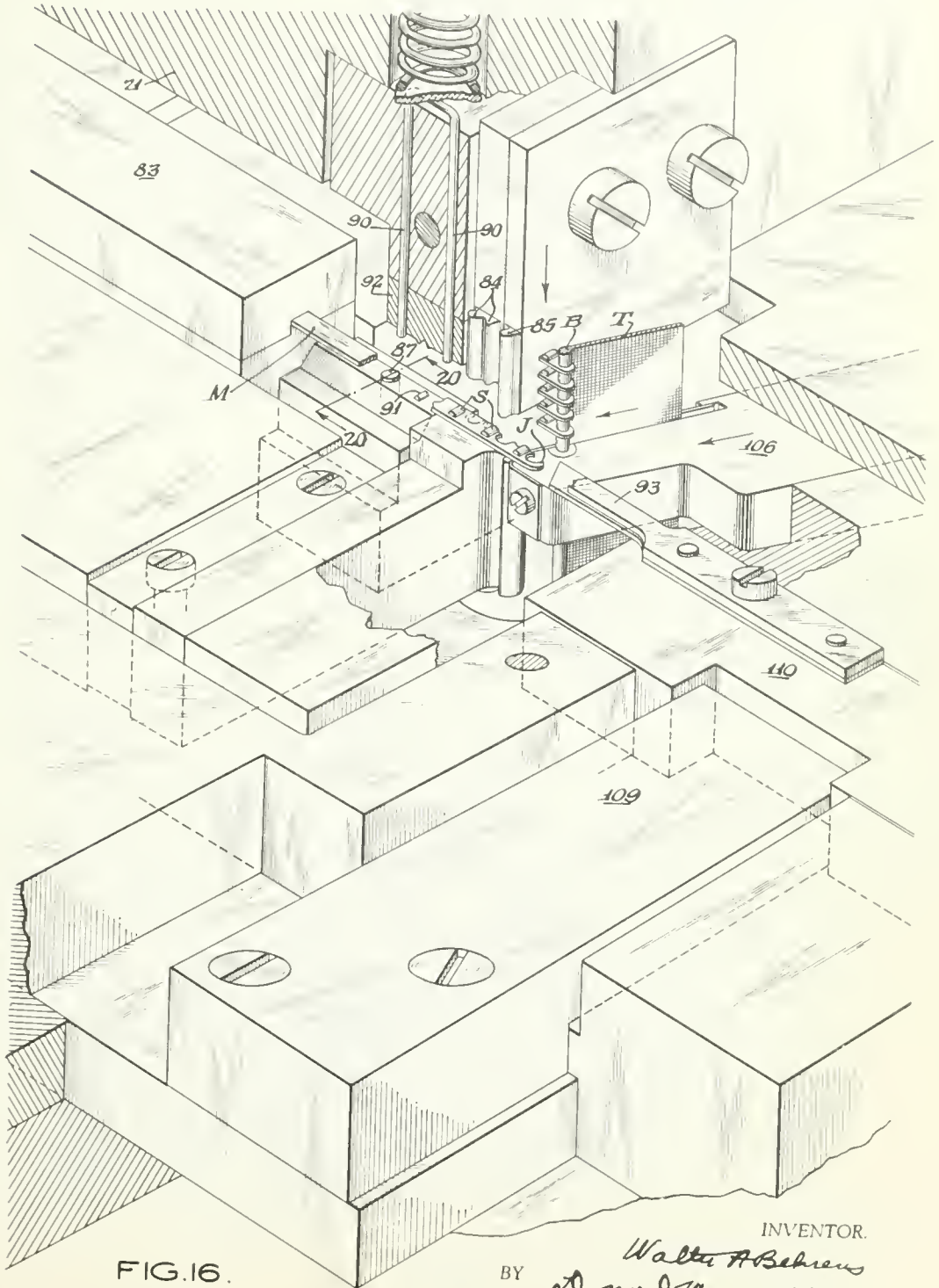


FIG. 16.

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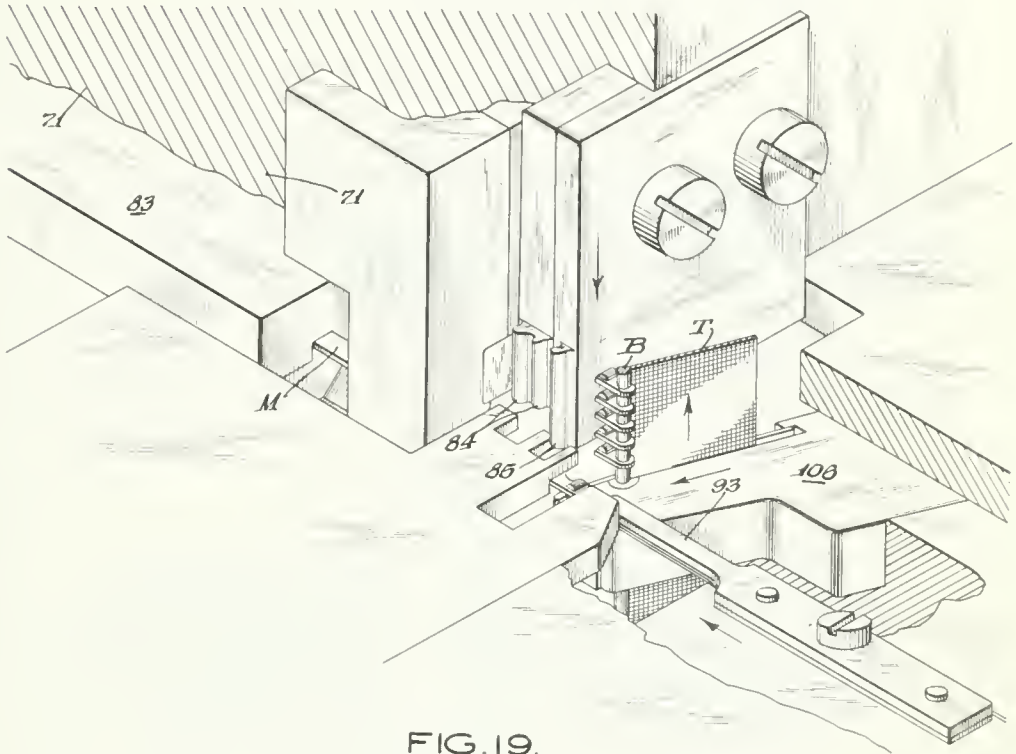


FIG. 19.

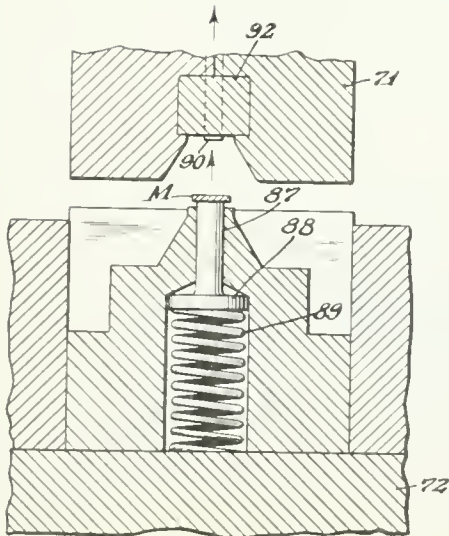


FIG. 20.

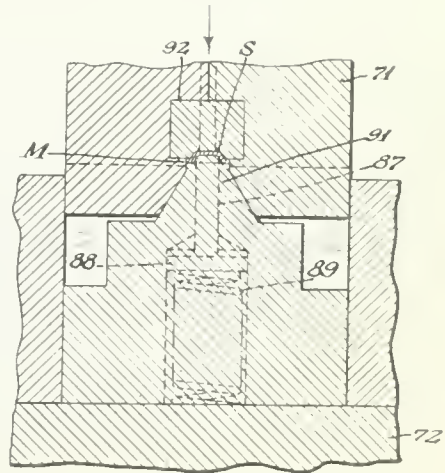


FIG. 21.

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APPARATUS FOR MAKING SLIDE FASTENER STRINGERS

Filed Dec. 28, 1939

12 Sheets-Sheet 11

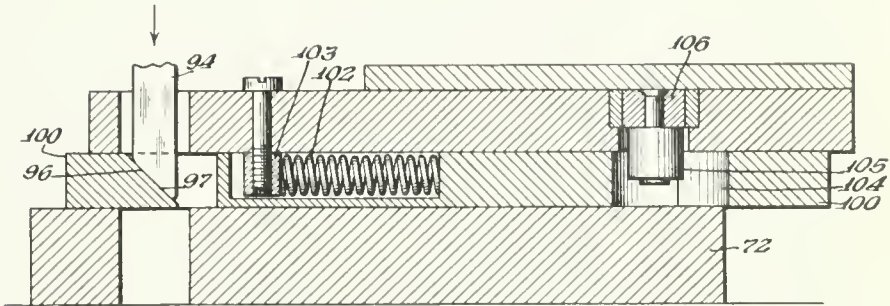


FIG. 22.

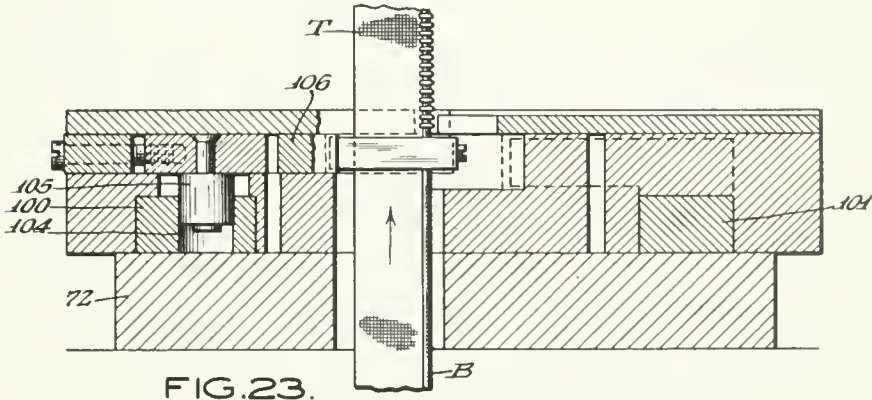


FIG. 23.

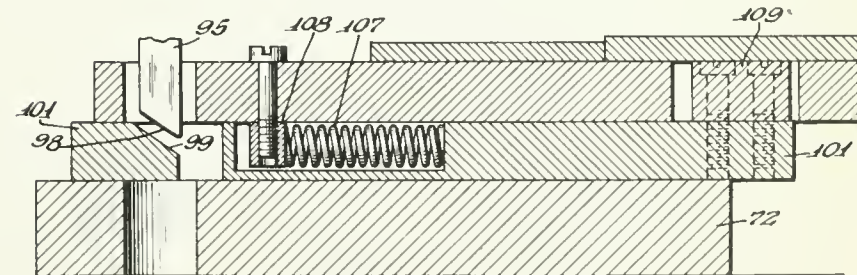


FIG. 24.

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APPARATUS FOR MAKING SLIDE FASTENER STRINGERS

Filed Dec. 28, 1939

12 Sheets-Sheet 12

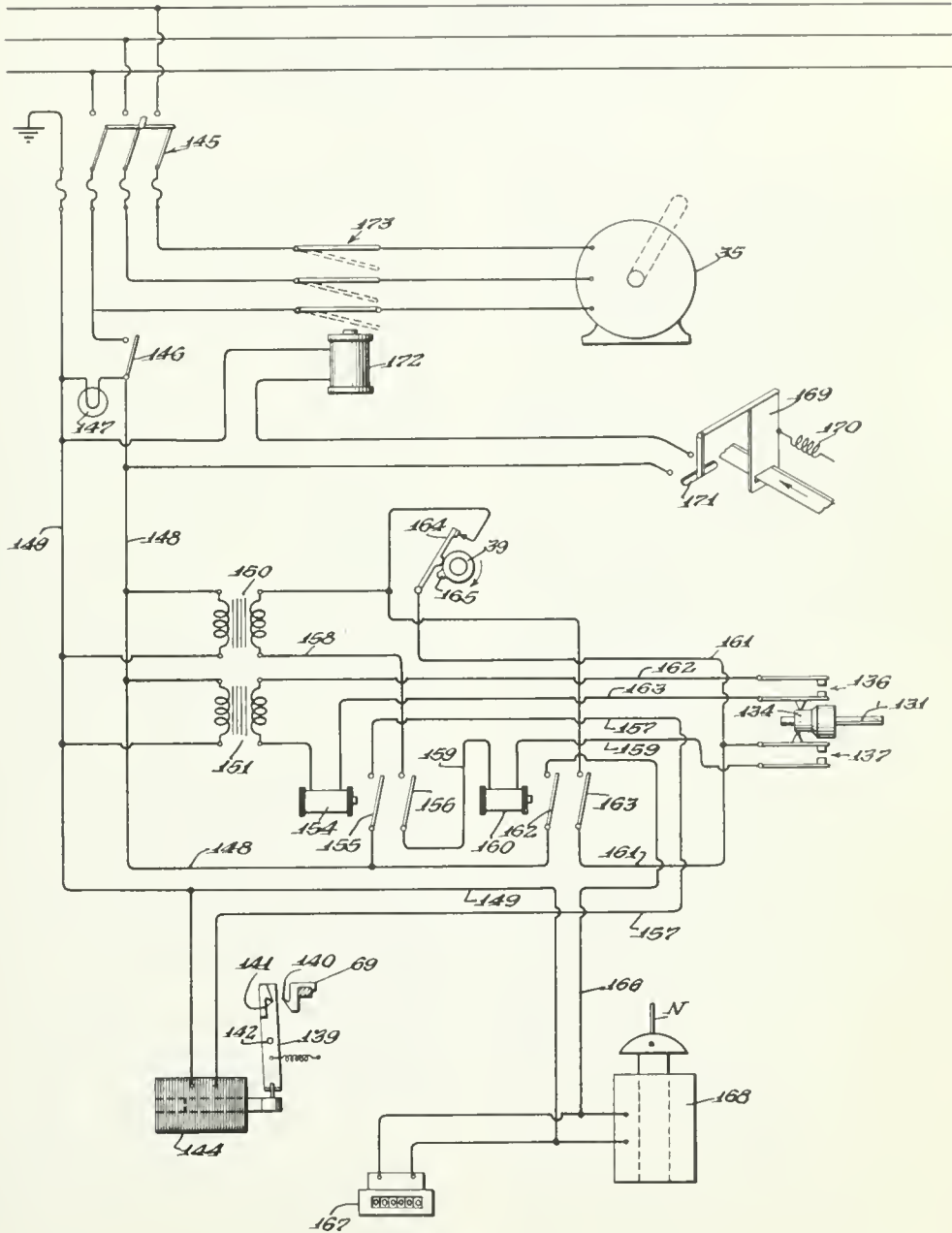


FIG. 25.

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UNITED STATES PATENT OFFICE

2,267,783

APPARATUS FOR MAKING SLIDE FASTENER STRINGERS

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Application December 28, 1939, Serial No. 311,398

14 Claims. (Cl. 153—1)

This invention relates to improvements in the apparatus for forming continuous slide fastener stringers.

Broadly, it is an object of this invention to provide a novel apparatus for intermittently forming and securing scoops onto a tape in spaced relationship in association with a tape jump mechanism which rapidly and efficiently forms separation zones between groups of the scoops. This case is a continuation in part of my copending application, Serial No. 241,195, filed on November 18, 1938, and entitled "Method of and apparatus for forming slide fastener stringers."

In accordance with the present invention the slide fasteners are made in a continuous manner using a continuous metal strip progressively shaped into scoops having head and jaw portions intermittently clamped in spaced relationship onto the tape. The tape is correspondingly intermittently displaced transversely of its normal feed path during its rest period to the jaws of the scoops. After scoop clamping operations, the tape is returned to its position for the intermittent advancing operation.

An important feature of the present invention resides in the novel apparatus for effecting a jump or predetermined spacing between attached groups of scoops to determine the length of the slide fasteners produced. Previous attempts providing such spaces have been unsatisfactory in that the either too large time interval was required, or that undue mechanical strains were encountered in the machine, or shorter periods were used. The present invention is directed to novel electro-mechanical means for effecting the tape jumping operation between scoop fastening cycles to effect the blank spaces on the tape in a predetermined manner. A timing chain is employed coupled to the machine drive for synchronous operation and adjusted in length to initiate the jumps in predetermined relation with the stringer formation.

Electro-mechanical arrangements are provided for effecting the tape jumps of any desired length within the order of four or less cycles or strokes of the machine, a cycle corresponding to the time between successive scoop forming and attaching operations. The rapid jumping or advancing of the tape for the blank sections thereof renders the production of a given machine more efficient as to the stringer output, which in practical embodiments may be as high as 25% or greater. Novel interlocking arrangements are incorporated in the mechanism to insure safety during the tape jumping intervals without interfering

with the associated operations of the machine or unduly straining the mechanism.

It is accordingly among the objects of the present invention to provide a novel means for jumping or otherwise accelerating the advancement of the tape during stringer formation to substantially speed up the overall production of stringers in a given machine; to provide novel electro-mechanical tape jumping means employing a continuously driven timer chain and associated successively operated relays which are interlocked to insure proper jumping of the tape without interfering with the other components thereof; and to provide a novel tape jumping arrangement operated independently of the stringer machine, and without straining any portion of the mechanism thereof.

These and other objects of the present invention will become more evident in the following description taken in connection with the drawings, in which:

Figure 1 is a front elevation of a preferred embodiment of the apparatus for forming slide fastener stringers in accordance with the present invention.

Figure 2 is an end elevation taken in section along lines 2—2 of Figure 1.

Figure 3 is an end elevation taken in section along lines 3—3 of Figure 1.

Figure 4 is a side elevation of the apparatus.

Figure 5 is an end elevation taken in section along lines 5—5 of Figure 4.

Figure 6 is a plan view of the apparatus.

Figure 7 is an end view of the timing chain and associated parts taken along lines 7—7 of Figure 6.

Figure 7a is a view similar to Figure 7 showing the timing chain and the contact operated thereby in a different position.

Figure 8 is an end elevation taken in section along lines 8—8 of Figure 6.

Figure 9 is an end view of a hook and latch parts associated with the metal strip feed arresting mechanism, taken in section along lines 9—9 of Figure 8.

Figure 9a is a view similar to Figure 9 showing the hook in its latched position.

Figure 10 is an end elevation in section taken along lines 10—10 of Figure 6.

Figure 11 is an end elevation taken in section along lines 11—11 of Figure 6.

Figure 12 is an end elevation in section taken along lines 12—12 of Figure 6.

Figure 13 is a side view of the tape spool and a safety switch.

Figure 14 is a plan view of the die bed assembly, with parts thereof partially broken away.

Figure 15 is a detail plan view partly in section showing the stepwise formation of the fastener element on the continuous metal strip.

Figure 16 is a perspective view of the die assembly, the punch head being in its upper position, and the stripper plate and cut-off punch being removed.

Figure 17 is a perspective view similar to Figure 16 of the die assembly with the punch head in its lower position.

Figure 18 is a perspective view of the die assembly with the punch head in its lower position, and the stripper plate being removed.

Figure 19 is a perspective view of the die assembly, the punch head being in its upper position, and the cut-off punch being removed.

Figure 20 is an end view taken in section along lines 20—20 of Figure 16.

Figure 21 is an end view taken in section along lines 21—21 of Figure 17.

Figure 22 is an end view taken in section along lines 22—22 of Figure 14.

Figure 23 is an end view taken in section along lines 23—23 of Figure 14.

Figure 24 is an end view taken in section along lines 24—24 of Figure 14.

Figure 25 is a diagrammatic view of the electrical connections and arrangements associated with the tape jump mechanism of the present invention.

Referring to the drawings in general, the apparatus for forming continuous slide fastener stringers is shown in assembly in Figures 1, 4 and 6 and comprises (a) a metal strip feed; (b) a stringer forming mechanism comprising blanking and clamping members; (c) a tape feed mechanism; (d) a tape jump mechanism; the tape jump mechanism being operable through electrical contacts from a separate electric source, while all the other mechanisms are operable from a common mechanical drive having a common source of power.

On the table 30 of the apparatus are re-mounted the stringer forming mechanism, the metal strip feed, the tape feed, and the tape jump mechanism, the latter being mounted below table 30. Table 30 is supported by legs 31 which in turn support bracket 32 carrying the tape spool 33 which supplies tape T. Cross bars 34 fastened on legs 31 support electric motor 35 which drives main shaft 39 by means of pulleys 36 and 37 operable through belt 38. Shaft 39 is journaled in U-shaped bracket 40 mounted on table 30.

The metal feed strip

Referring in detail to Figures 1, 3, 6, 8, 10 and 11, the metal strip feed comprises a pair of rotatably mounted rollers 41 and 42 which intermittently feed the continuous metal strip to the punch and die assembly to be described hereinafter. Roller 42 is reciprocally mounted. Sprocket wheel 43 is rotatably mounted on shaft 39 driving sprocket wheel 45 by means of chain 44, in turn rotatably mounted on shaft 46 carrying sprocket wheel 47. Wheel 47 drives sprocket wheel 49 by means of chain 48 mounted on shaft 60.

Worm 50a is rotatably mounted on shaft 50 driving worm gear 51 mounted on shaft 52 which in turn carries sprocket wheel 53 driving time chain 54. Cam 55 is rotatably mounted on shaft 46 and is provided with an angularly shaped

groove 56. Roller 57 provided on lever 58, extending through table 30, is guided in groove 56. When shaft 46 is driven through shaft 39 by chain 44, lever 58 which is pivoted on shaft 59 is oscillated (Figure 8). Shaft 59 is journaled in bracket 60 secured to table 30. A ratchet disc 62 is rotatably mounted on shaft 59. Pawl 63, rotatably mounted on lever 58 is pressed downwardly by spring 61 and advances disc 62 one tooth at a time upon each rocking movement of lever 58.

It will now be evident that shaft 39 drives shaft 46 by means of sprocket wheels 43, 45 which cause cam 55 to revolve. During each revolution of cam 55 the upper arm of lever 58 is swung to the left and the right, pawl 63 advancing disc 62 tooth by tooth or several teeth at once, depending upon the shape of groove 56 and the length of the arms of lever 58. Roller 41 is intermittently rotated by such movement of disc 62.

Roller 42 is rotatably mounted in U-shaped bracket 64 which is reciprocally guided by screws 65 of bracket 60. Screws 66 are fastened in bracket 60 and are provided with compression springs 67 tending to press bracket 64 downwardly, and press rollers 42 against metal strip M, as well as against roller 41. Lever 69, pivoted on shaft 68 mounted in bracket 60, is provided with projection 70 which, if moved upwardly, is adapted to lift bracket 64 in turn reciprocally mounted on screws 65. Lever 69 is adapted to be tilted by the punch head in order to allow for the tape jump, as will be described hereinafter.

The clamping and stamping assembly and operation

The blanking and stamping assembly and associated parts are shown in detail in Figures 1, 2, 4 and 14 to 24. The assembly comprises a reciprocable male punch head 71 and a female die section 72 mounted on table 30. Eccentric 73 carried by main shaft 39 reciprocates head member 74 provided with a screw 75, the head of which is in the form of a ball or sphere 76. Ball 76 is received in a corresponding spherical bearing formed on curved member 77 removably fastened to cross bar 78.

Cross bar 78 is fastened to posts 79 which are guided at 80 in bracket 40, and which are further guided in holes (not shown) in table 30. Springs 81 are provided between table 30 and punch head 71 which cushion the up and down movement of the punch head 71. It will now be evident that when shaft 39 rotates, eccentric 73 reciprocates the punch head 71 by means of cross bar 78 and posts 79. The stroke of eccentric 73 is comparatively small, as indicated in Figure 2.

The punch and die assembly will now be described in detail with specific references to Figures 14 to 24. On die bed 72 are mounted posts 82 which guide the punch head 71. Metal strip M is fed intermittently, as described above and is guided in guide block 83 mounted in die bed 72 to prevent lateral movement thereof. On the downstroke of punch head 71 punches 84, 85 and 86, fastened on head 71, simultaneously act upon the metal strip, punching and severing it. At first, however, metal strip M moves over plate 87 fastened on piston rod 88 which is actuated by compression spring 89 fastened in die bed 72.

On the downward stroke of punch 71 plate 90 mounted in the punch head presses down plate 87 and on the upward stroke of punch 71 plate 87 lifts the metal strip a small distance from

the die bed to facilitate the clearance of the punches from the metal strip M, and the subsequent feeding movement of strip M. Thereafter, scoop heads S are formed on the strip M by means of die 91 secured to the die bed and punch 92 provided on punch head 71.

After the scoop heads are formed, strip M is fed under punch 84 which cuts out a predetermined outline, as shown in greater detail in Figure 15. Punch 85 serves to hold the strip in a particular position in order to insure proper severance, by severing punch 86 on the proper plate. The individual scoops are thus provided with a jaw J which serves to fasten it onto the bead B of tape T in the manner set forth in detail in the copending application referred to above. The scoops are severed from metal strips M in the last stage of their formation, as shown in Figure 15.

The synchronized movements of tape T and stringer clamping block 93 will now be described. The male punch carries two posts 94 and 95 provided with bevel formations 96 and 98 respectively, cooperating with beveled surfaces 97 and 99 provided in the reciprocally mounted plates 100 and 101 which in turn actuate tape carrying block 106 and clamping block 93. As may be seen in Figures 22 and 24, post 94 is somewhat longer than post 95. This causes beveled surface 96 to first engage with cam 97 of plate 100.

The downward stroke of the male punch causes a displacement to the left of plate 100, Figures 14 and 22. A compression spring 102 is arranged between plate 100 and screw 103 fastened in the die bed. Plate 100 is provided with an angularly shaped groove 104 into which fits roller 105 provided on tape carrying plate 106. A displacement of plate 100 to the left (Figure 14), causes tape carrying plate 106 to move downwardly. Coacting groove 104 is shaped so that a downward stroke of punch head 71, causing a displacement of plate 100 to the left, produces at first a rapid movement of tape carrying plate 106 and, thereafter, downward movement of post 94 does not cause further movement of tape carrying plate 106.

When the male punch moves further on downwardly, surface 98 contacts surface 99, causing a displacement of plate 101 to the left (Figure 14). Spring 107, arranged between plate 101 and screw 108 fastened on the die bed, serves to return plate 101 upon the upward stroke of the male punch. Plate 109, being integral with plate 101, is also moved to the left upon the downward stroke of the punch, and plate 109 in turn moves plate 101 carrying clamping punch 93.

The downward stroke of the male punch accordingly causes plate 100 to move to the left, and thereafter the movement of plate 101. The movement of plate 100 causes a downward movement of tape carrying plate 106, bringing tape T from the position shown in Figure 16 to that shown in Figure 17, i. e. into alignment with the metal strip M. Further downward movement of the male punch head does not produce a corresponding further movement of tape carrying plate 106. The movement of plate 101 towards the left (Figure 14) causes a corresponding movement of plate 110, carrying clamping punch 93, following the movement of plate 106. After tape T is in alignment with metal strip M clamping punch 93 presses jaw J against bead B, and severing punch 86, which has previously been moved down by the male punch, holds the scoop

firmly while jaw J is clamped on bead B of tape T.

On the upward stroke of the male punch, punches 84, 85 and 86 move also upward, releasing the metal strip. Plates 100 and 101 are thereupon released from beveled surfaces 94 and 95, and springs 102 and 107 return plates 100 and 101 into their original position. The return movement of plates 100 and 101 causes the clamping punch 93 to move away from the metal strip, and tape carrying member 106 then moves out of alignment with the metal strip. The metal strip is then free to advance another step while the tape T is also free to advance into a position for the next scoop to be clamped onto its bead B.

The tape feed arrangement

The tape feed arrangement is shown in Figures 1, 4, 5, 6, 12 and 13. The tape is unwound from spool 33, passed through tube 111, moved through a hole in table 30 and through tape carrier plate 106. Tape T is fed by the intermittent rotation of knurled wheels 112 and 113, in the following manner. On main shaft 39 is mounted an eccentric (not shown) which reciprocates lever 114, caused by the rotation of shaft 39 and operates pawl 116 over ratchet disc 117. Reverse movement is prevented by pawl 118.

Disc 117 is fastened on shaft 115 which carries knurled wheel 113. Arm 119 of lever 114, which carries pawl 116 and which connects lever 114 with shaft 115, is journaled in ball joint 120. Gear 121, mounted on shaft 115, meshes with gear 122 in turn mounted on shaft 123 carrying knurled wheel 112. Thus, lever 114 advances wheel 117 one or several teeth for each revolution of shaft 39, causing a positive rotation of knurled wheels 112 and 113 in opposite directions through the intermediary of gears 121 and 122. An important feature of the reciprocatory drive of ratchet disc 117 resides in the detachability of driving rod 114 from crank 119 and operating pawl 116 to permit ready access to the tape T within the mechanism. Towards this end, a removable connection 114a is provided at the top end of rod 114 and crank arm 119. The ball joint 120 is removable from its connection 114a on rod 114, through the spring joint connection shown. When thus disassembled the assembly carrying pawl 116, ratchet disc 117, and arm 115, is movable to the left in Figure 4 as indicated in dotted at positions 116', 117' and 119', to permit access to tape T.

The time chain, metal feed latch and tape jump mechanism

An important feature of the present invention resides in materially reducing the time required in providing the blank spaces or jumps between successive stringer sections. In the preferred arrangement to be described, a blank space or jump of any desired length is made feasible within four strokes or cycles of operation of the machine, so as not to strain the machinery or require any excessive rate of speed therein. Each stroke corresponds to the cycle required for attaching a single scoop on tape T. Thus, in a practical case, where an 8-inch zipper or stringer is made, 22 strokes or cycles of operation of the machine is generally employed for the space between successive completed stringers. In accordance with the present invention, the 22-cycle space is provided by a corresponding jump of the tape, preferably within four strokes or cycles of the machine. This corresponds to an increase in

the production capacity of 20% in making the 8-inch zippers. Corresponding production increases will apply for different lengths of stringers.

In accordance with the preferred arrangement for effecting the predetermined tape jumps, electro-mechanical means are used with interlocking controls to prevent destructive action in event of electric contact failure. Electrical controls are provided to select the proper phase of the cycle in which the jump takes place, which phase corresponds to the time when the tape is free to move, and no scoop element is being attached thereon. The jumping mechanism is operated through separate electrical control means without straining any mechanical operation of the stringer making mechanism.

Referring now to Figures 1, 3, 7, 7a, the timing chain 54 is shown, arranged on sprocket wheel 53 for determining the length of the individual slide fasteners or stringers by initiating the tape jumping action referred to. As described above, pulley 53 is actuated by main shaft 39 through sprocket wheels 43, 45 driven by sprocket chain 44, by sprocket wheels 47, 47 driven by sprocket chain 48, and by worm and worm gear 50a, 51. Timing chain 54 is thus rotated when shaft 39 is rotated. Arm 124 is mounted on leg 31. Bracket 125 is fastened to the table 30 and to arm 124. Shaft 52 of sprocket wheel 53 is journaled in bracket 125.

Timing chain 54 is provided with a projecting dog or lug 126 cooperating with projection 127 of lever 128 pivotally mounted on bracket 125 at 129. The shorter arm of lever 128 is provided with spring 130 fastened on bracket 125, biasing it to the left (Figure 7). Rod 131 is guided at 132 in bracket 125 and is pivotally mounted at 133 on lever 128. Rod 131 is provided with an adjustable ring 134 having a shoulder 135 which is adapted to actuate cam or spring switches 136 and 137.

When dog 126 contacts projection 127, rod 131 is pushed to the left as shown in Figure 7a, and shoulder 135 of ring 134 operates electrical switch arms 136 and 137. Switches 136 and 137 are arranged in such manner that switch 136 is closed first and switch 137 thereafter. Switches 136 and 137 control the operation of the tape jump mechanism. The length of timing chain 54 and its rate of travel determine the stringer length, i. e., the number of scoops on each chain or group spacedly fastened on tape T. The length of the completed slide fasteners is determined by adjusting the length of chain 54.

As will be explained in detail in connection with Figures 8, 9, 9a, 10 and 11, the closing of switch 136 by timing chain 54 operates the metal feed latch to arrest the advance of strip M. Lever 69, pivoted at 68, lifts bracket 64 by means of projection 70. Punch head 71 actuates lever 69. Adjusting screw 138 serves for adjustment of the rocking movement of lever 69. Metal strip M can only be fed when roller 42 presses against roller 41. However, when projection 70 of lever 69 lifts bracket 64, roller 42 is disengaged from roller 41.

Ordinarily, roller 42 will be disengaged from roller 41 only during the downstroke of punch head 71. Lever 69 is provided with hook 140 which cooperates with hook 141 of lever 139, rotatably mounted on screw 142, in turn fastened to bracket 143 mounted on table 30. Magnet 144, also mounted on bracket 143' is adapted, when energized, to pull lever 139 towards the magnet,

causing hook 141 to engage with hook 140 during the downstroke of punch head 71.

Lever 69 is then held by hook 141 in the position shown in dotted lines in Figure 8, when projection 70 lifts bracket 64 and roller 42 disengages roller 41. Rotation of roller 41 does not advance the metal strip as long as hook 141 engages with hook 140 of lever 69. However, as soon as magnet 144 is deenergized, the downstroke of punch head 71 disengages hooks 140 and 141. Upon the upstroke of punch head 71, roller 42 will engage roller 51 and advance the metal strip M one step further.

The operation of the tape jump mechanism will now be described, particularly in connection with Figures 25, 4 and 12. As shown in Figure 25, motor 35 is a three-phase motor, supplied by the main current supply through main switch 145. A switch 146 is provided in current lead 148. Pilot lamp 147 serves to indicate when lines 148 and 149 are energized. Transformers 150 and 151 are provided in the circuit for reducing the voltage applied for the two relay circuits to be described.

When switch 136 is closed, through the action of timing chain 54, leads 152 and 153 are interconnected with transformer 151, energizing relay 154 to cause the closing of switches 155 and 156. Closure of switch 155 connects line 148 with lead 157, thus energizing strip M feed arresting magnet 144. This action effects the latching of lever 69, preventing further intermittent feeding of metal strip M. The movement of ring 134, actuated by dog 126 of timing chain 54 thus first causes the inaction of the metal feed roller 42, stopping strip M.

The next operation in the cycle comprises the closing of switch 137 which connects transformer 150 with relay solenoid 160 by means of lead 158 through switch 156 previously closed by relay 154 through the action of switch 136. This is a safety interlocking action. The circuit is thus completed for relay 160, which closes switches 162 and 163. It will now be evident that relay 160 can only be actuated when switch 156 has previously been closed, assuring that the next step may take place only when metal strip M feed latch is actuated. It will further be evident that relay 160 can only be actuated when timer switch 164 is closed.

Timer switch 164 is cyclically operated by cam 165 on main drive shaft 39. Opening of timer switch 164 takes place only during the downstroke of the punch head, i. e., when tape T is moved into the path of metal strip M by tape carrier plate 106. Switch 164 is thus closed only when tape T is free to be advanced or jumped. When closed, switch 162 connects lead 148 with lead 166, which in turn connects a counter device 167 in parallel with jumper magnet 168, to mains 148, 149.

Counter device 167 counts the individual slide fasteners or stringers formed by the machine. The purpose of jumper magnet 168 will become apparent shortly. The closing of switch 163 short-circuits timer switch 164. When relay 160 is actuated, the cyclic opening of timer switch 164 thus does not interrupt the current energizing magnet 168, or otherwise interfere with the tape jumping operation.

Safety switch 171, see also in detail in Figures 4 and 13, is actuated by lever 169 provided with spring 170. Should tape T, unwinding from spool 33 be bent over or otherwise not be smooth, lever 169 closes switch 171, which energizes relay 172

to open switch 113, disconnecting motor 35 from the main current supply, and stop the operation of the machine.

The actual tape jump mechanism of the disclosed embodiment may be seen in Figures 4 and 12. Should jump magnet 168 be energized as described herein, pull cord N, guided over pulley 174 rotatably mounted on bracket 175, is drawn downwards as indicated by the arrow. Cord N is fastened to disc 177 by screw 176, which disc is rotatably mounted on shaft 115. Pawl 178 is mounted on an extension of disc 177, and engages ratchet 179 fixedly mounted on shaft 115. Spring 180, fastened to disc 177, biases disc 177 counterclockwise.

When jump magnet 168 is energized, pull cord N rotates disc 177 clockwise, causing pawl 178 to turn ratchet 179 by a predetermined angular amount. Knurled roller 113, fastened to shaft 115, is rotated together with ratchet 179, pulling tape T by knurled rollers 112 and 113 by an amount corresponding to the movement of cord N. This distance is the exact predetermined jump distance required between the stringers, and is effected fully within four strokes of operation. The time interval of passage or action of the dog 126 of chain 54 corresponds to the four strokes or cycles. More or less strokes may be thus employed.

When magnet 168 is deenergized, cord N returns to its inoperative position through the action of biasing spring 180. Knurled rollers 112 and 113 then resume their intermittent feed of tape T through the action of ratchet 117 as described. To dampen the movement of pull cord N by magnet 168, dash-pot or mechanical damping device 183 is used, as shown in Figure 4. Towards this end, rod 182 of pneumatic plunger device 183 is coupled to the plunger of jump magnet 168. A hand wheel 184, shown in dotted lines in Figure 1, may be provided on main drive shaft 39 to permit manual rotation of this shaft. Spring 130 (Figure 7) biases switch rod 131 to the left to open circuit switches 136, 137 when dog 126 passes to restore normal stringer forming operation in the machine.

In summary, the novel tape jumping arrangement of the present invention operates as follows: The timer chain is driven at a predetermined rate in synchronism with the driving of the machine, and contains a projection or dog 126 which initiates the tape jumping operation at predetermined intervals. The length of the chain is adjustable for different blank spacings or lengths of stringers, as is understood. When timer chain dog 126 presses against projection 127 of lever 128 (Figure 7, 7a) electrical switches 136 and 137 are successively closed to correspondingly successively operate relays 154 and 160. The energization of relay 154 causes solenoid 144 to move latch portion 141 towards latch 140, to arrest the feeding of the metal scoop strip M, as described in connection with Figures 8, 9, 9a and 11.

Relay 160, being interlocked through switch 156, cannot be energized until relay 154 has first been energized, and therefore until the feeding of metal tape M is arrested. Relay 160, furthermore, cannot be energized except when timer switch 164 is closed, as determined by timer cam 165, when the punch is out of the die and tape T is free to be moved. Thereupon, tape advancing solenoid 168 is energized to move pull-cord N a predetermined amount as disclosed in connection with Figure 12. A cushioning means,

such as air cylinder 183, (Figure 4) is attached to the plunger of solenoid 168. The movement of pull-cord N advances ratchet disc 179 a predetermined amount which, due to attached knurled feed roller advances tape T the predetermined length corresponding to the desired blank space. An electro-magnetic counter 167 is connected in circuit with solenoid 168 to count the number of jumps performed by the machine, and therefore corresponds to the number of completed slide fasteners made. The cycle is repeated for each revolution of timing chain 54.

Although a preferred embodiment of the stringer forming and tape jumping mechanism has been disclosed in accordance with the present invention, it is to be understood that variations and modifications therein may be made coming within the broader spirit and scope thereof, as defined in the following claims.

What I claim is:

1. The combination with a continuous slide fastener forming machine having apparatus for successively attaching scoops onto a tape, of means for producing blank spaces between groups of scoops on the tape comprising an instrumentality for jumping the tape, and means for controlling the operation of said instrumentality in synchronism with the continuous operation of the machine comprising a timing component and electrical switching means actuated by said component, and a timer switch in circuit with said switching means to insure energization thereof only at a predetermined phase in the cycles of operation of the machine.

2. The combination with a continuous slide fastener forming machine having apparatus for successively attaching scoops onto a tape, of means for producing blank spaces between groups of scoops on the tape comprising an instrumentality for jumping the tape, and means for controlling the operation of said instrumentality in synchronism with the continuous operation of the machine comprising a timing chain with a dog driven synchronously with the machine, electrical switching means intermittently actuated by said dog, and a timer switch in circuit with said switching means to insure energization thereof only at a predetermined phase in the cycles of operation of the machine including circuit connections to render said timer switch ineffectual upon energization of said switching means whereby the tape jumping operation may occur over an interval of several cycles of operation of the machine.

3. The combination with a continuous slide fastener forming machine having apparatus for successively attaching scoops onto a tape, of means for producing blank spaces of predetermined amounts between groups of scoops on the tape comprising an instrumentality for jumping the tape, and means for controlling the operation of said instrumentality in synchronism with the continuous operation of the machine comprising a timing chain with a dog driven synchronously with the machine, electrical switching means intermittently actuated by said dog, and a timer switch in circuit with said switching means to insure energization thereof only at a predetermined phase in the cycles of operation of the machine including circuit connections to render said timer switch ineffectual upon energization of said switching means, whereby the tape jumping operation may occur over an interval of the order of four cycles of operation of the machine as determined solely by the dura-

tion of coaction between said dog and said switching means.

4. The combination with a continuous slide fastener forming machine having apparatus for successively attaching scoops onto a tape, of means for producing blank spaces of predetermined lengths comprising an instrumentality for rapidly advancing the tape by amounts corresponding to the lengths of said blank spaces embodying feed rollers for the tape, an element coupled to said feed rollers and a solenoid having a plunger for actuating said element to advance said rollers to advance the tape, and means for controlling the operation of said instrumentality in synchronism with the continuous operation of the machine comprising a timing component with a dog driven synchronously with the machine, electrical switching means actuated by said dog for operating said element, and a timer switch in circuit with said switching means to insure energization thereof only at a predetermined phase in the cycles of operation of the machine including circuit connections to render said timer switch ineffectual upon energization of said switching means whereby the tape advancing operation may occur over an interval of several cycles of operation of the machine as determined solely by the duration of coaction between said dog and said switching means.

5. The combination with a continuous slide fastener forming machine having mechanism for intermittently feeding a continuous metal strip and apparatus for shaping individual scoops from the metal strip and successively attaching the scoops onto a tape, of means for producing blank spaces of predetermined amounts between groups of scoops on the tape comprising a device for positively arresting the feeding of the metal strip for a predetermined integral number of feeding strokes, an instrumentality for jumping the tape by amounts corresponding to the lengths of said blank spaces, and means for controlling the operation of said device and said instrumentality in synchronism with the continuous operation of the machine comprising a timing component driven synchronously with the machine, electrical switching means intermittently actuated by said timing component including a first switch arranged for operating said device to arrest the feeding of the metal strip, and a second switch arranged for operating said instrumentality for jumping the tape, said second switch being actuated subsequently to the actuation of said first switch whereby the metal strip is held stationary during the jumping of the tape.

6. The combination with a continuous slide fastener forming machine having mechanism for intermittently feeding a continuous metal strip and apparatus for shaping individual scoops from the metal strip and successively attaching the scoops onto a tape, of means for producing blank spaces of predetermined amounts between groups of scoops on the tape comprising a device for positively arresting the feeding of the metal strip for a predetermined integral number of feeding strokes, an instrumentality for jumping the tape by amounts corresponding to the lengths of said blank spaces, and means for controlling the operation of said device and said instrumentality in synchronization with the continuous operation of the machine comprising a timing component driven synchronously with the machine, electrical switching means intermittently actuated by said timing component including a

first switch arranged for operating said device to arrest the feeding of the metal strip, and a second switch arranged for operating said instrumentality for jumping the tape, said second switch being actuated subsequently to the actuation of said first switch whereby the metal strip is held stationary during the jumping of the tape, and a timer switch in circuit with said second solenoid to insure energization thereof only at a predetermined phase in the cycles of operation of the machine.

7. The combination with a continuous slide fastener forming machine having mechanism for intermittently feeding a continuous metal strip and apparatus for shaping individual scoops from the metal strip and successively attaching the scoops onto a tape, of means for producing blank spaces of predetermined amounts between groups of scoops on the tape comprising a device for positively arresting the feeding of the metal strip for a predetermined integral number of feeding strokes, an instrumentality for jumping the tape by amounts corresponding to the lengths of said blank spaces, and means for controlling the operation of said device and said instrumentality in synchronism with the continuous operation of the machine comprising a timing component driven synchronously with the machine, electrical switching means intermittently actuated by said timing component including a first switch arranged for operating said device to arrest the feeding of the metal strip, and a second switch arranged for operating said instrumentality for jumping the tape, said second switch being actuated subsequently to the actuation of said first switch whereby the metal strip is held stationary during the jumping of the tape, and a timer switch in circuit with said second solenoid to insure energization thereof only at a predetermined phase in the cycles of operation of the machine, whereby the tape jumping operation may occur over an interval of several cycles of operation of the machine, as determined solely by the duration of coaction between said timing component and said switching means.

8. The combination with a continuous slide fastener forming machine having mechanism for intermittently feeding a continuous metal strip and apparatus for shaping individual scoops from the metal strip and successively attaching the scoops onto a tape, of means for producing blank spaces of predetermined amounts between groups of scoops on the tape comprising a device for positively arresting the feeding of the metal strip for a predetermined integral number of feeding strokes, an instrumentality for jumping the tape by amounts corresponding to the lengths of said blank spaces, and means for controlling the operation of said device and said instrumentality in synchronism with the continuous operation of the machine comprising a timing component having a dog driven synchronously with the machine, electrical switching means intermittently actuated by the dog of said timing component, including a first switch arranged for operating said device to arrest the feeding of the metal strip, and a second switch arranged for operating said instrumentality for jumping the tape, said second switch being actuated subsequently to the actuation of said first switch whereby the metal strip is held stationary during the jumping of the tape, whereby the tape jumping operation may occur over an interval of the order of four cycles of operation of the ma-

chine, as determined solely by the duration of coaction between said dog and said switching means.

9. The combination with a continuous slide fastener forming machine having mechanism for intermittently feeding a continuous metal strip and apparatus for shaping individual scoops from the metal strip and successively attaching the scoops onto a tape, of means for producing blank spaces of predetermined lengths between groups of scoops on the tape comprising a device for positively arresting the feeding of the metal strip for a predetermined integral number of feeding strokes embodying a latching member and a first solenoid for actuating said member, an instrumentality or jumping the tape by amounts corresponding to the lengths of said blank spaces embodying feed rollers for the tape, an element coupled to said feed rollers and a second solenoid having a plunger for actuating said element to advance said rollers to jump the tape, and means for controlling the operation of said device and said instrumentality in synchronism with the continuous operation of the machine comprising a timing component driven synchronously with the machine, electrical switching means actuated by said component including a first switch in circuit with said first solenoid for arresting the feeding of the metal strip, and a second switch in circuit with said second solenoid for effecting the jumping of the tape.

10. The combination with a continuous slide fastener forming machine having mechanism for intermittently feeding a continuous metal strip and apparatus for shaping individual scoops from the metal strip and successively attaching the scoops onto a tape, of means for producing blank spaces of predetermined lengths between groups of scoops on the tape comprising a device for positively arresting the feeding of the metal strip for a predetermined integral number of feeding strokes embodying a latching member and a first solenoid for actuating said member, an instrumentality for jumping the tape by amounts corresponding to the lengths of said blank spaces embodying feed rollers for the tape, an element coupled to said feed rollers and a second solenoid having a plunger for actuating said element to advance said roller to jump the tape, and means for controlling the operation of said device and said instrumentality in synchronism with the continuous operation of the machine comprising a timing component driven synchronously with the machine, electrical switching means actuated by said component including a first switch in circuit with said first solenoid for arresting the feeding of the metal strip, and a second switch in circuit with said second solenoid for effecting the jumping of the tape, said second switch being interlocked for actuation subsequently to the actuation of said first switch, whereby the metal strip is held stationary during the jumping of the tape.

11. The combination with a continuous slide fastener forming machine having mechanism for intermittently feeding a continuous metal strip and apparatus for shaping individual scoops from the metal strip and successively attaching the scoops onto a tape, of means for producing blank spaces of predetermined lengths between groups of scoops on the tape comprising a device for positively arresting the feeding of the metal strip for a predetermined integral number of feeding strokes embodying a latching member, and a first solenoid for actuating said

member, an instrumentality for jumping the tape by amounts corresponding to the lengths of said blank spaces embodying feed rollers for the tape, an element coupled to said feed rollers and a second solenoid having a plunger for actuating said element to advance said rollers to jump the tape, and means for controlling the operation of said device and said instrumentality in synchronism with the continuous operation of the machine comprising a timing component driven synchronously with the machine, electrical switching means actuated by said component including a first switch in circuit with said first solenoid for arresting the feeding of the metal strip, and a second switch in circuit with said second solenoid for effecting the jumping of the tape, and a timer switch in circuit with said second solenoid to insure energization thereof only at a predetermined phase in the cycles of operation of the machine.

12. The combination with a continuous slide fastener forming machine having mechanism for intermittently feeding a continuous metal strip and apparatus for shaping individual scoops from the metal strip and successively attaching the scoops onto a tape, of means for producing blank spaces of predetermined amounts between groups of scoops on the tape comprising a device for positively arresting the feeding of the metal strip for a predetermined integral number of feeding strokes embodying a latching member and a first solenoid for actuating said member, an instrumentality for jumping the tape by amounts corresponding to the amount of said blank spaces embodying feed rollers for the tape, a pull-cord coupled to said feed rollers and a second solenoid having a plunger for actuating said pull-cord to advance said rollers to jump the tape, and means for controlling the operation of said device and said instrumentality in synchronism with the continuous operation of the machine comprising a timing chain with a dog driven synchronously with the machine and electrical switching means intermittently actuated by said dog including a first switch in circuit with said first solenoid for operating said latching member, and a second switch in circuit with said second solenoid for operating said pull-cord, said second switch being arranged for actuation subsequently to the actuation of said first switch, whereby the metal strip is held stationary during the jumping of the tape.

13. The combination with a continuous slide fastener forming machine having mechanism for intermittently feeding a continuous metal strip and apparatus for shaping individual scoops from the metal strip and successively attaching the scoops onto a tape, of means for producing blank spaces of predetermined amounts between groups of scoops on the tape comprising a device for positively arresting the feeding of the metal strip for a predetermined integral number of feeding strokes embodying a latching member and a first solenoid for actuating said member, an instrumentality for jumping the tape by amounts corresponding to the amount of said blank spaces embodying feed rollers for the tape, a pull-cord coupled to said feed rollers and a second solenoid having a plunger for actuating said pull-cord to advance said rollers to jump the tape and a damping element connected with said pull-cord for mechanically smoothing the tape jumping operation, and means for controlling the operation of said device and said instrumentality in synchronism with the continu-

ous operation of the machine comprising a timing chain with a dog driven synchronously with the machine and electrical switching means intermittently actuated by said dog including a first switch in circuit with said first solenoid for operating said latching member, and a second switch in circuit with said second solenoid for operating said pull-cord, said second switch being arranged for actuation subsequently to the actuation of said first switch whereby the metal strip is held stationary during the jumping of the tape.

14. The combination with a continuous slide fastener forming machine having mechanism for intermittently feeding a continuous metal strip and apparatus for shaping individual scoops from the metal strip and successively attaching the scoops onto a tape, of means for producing blank spaces of predetermined amounts between groups of scoops on the tape comprising a device for positively arresting the feeding of the metal strip for a predetermined integral number of feeding strokes embodying a latching member and a first solenoid for actuating said member, an instrumentality for jumping the tape by amounts corresponding to the amount of said blank spaces embodying feed rollers for the tape, a pull-cord coupled to said feed rollers and a second solenoid

having a plunger for actuating said pull-cord to advance said rollers to jump the tape and a damping element connected with said pull-cord for mechanically smoothing the tape jumping operation, and means for controlling the operation of said device and said instrumentality in synchronism with the continuous operation of the machine comprising a timing chain with a dog driven synchronously with the machine and electrical switching means intermittently actuated by said dog including a first switch in circuit with said first solenoid for operating said latching member, and a second switch in circuit with said second solenoid for operating said pull-cord, said second switch being arranged for actuation subsequently to the actuation of said first switch whereby the metal strip is held stationary during the jumping of the tape, and a timer switch in circuit with said second solenoid to insure energization thereof only at a predetermined phase in the cycles of operation of the machine including circuit connections to render said timer switch ineffectual upon energization of said second solenoid whereby the tape jumping operation may occur over an interval of several cycles of operation of the machine.

WALTER A. BEHRENS.

DEFENDANT'S EXHIBIT "BT"

R. C. Legat Patent No. 2,116,726

Filed June 19, 1937

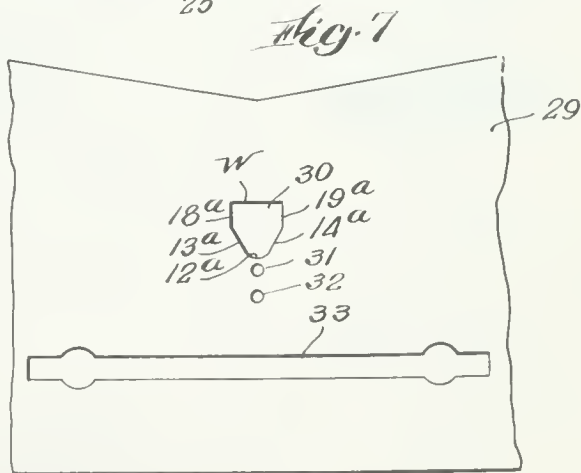
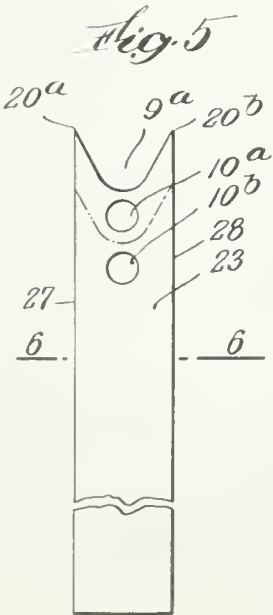
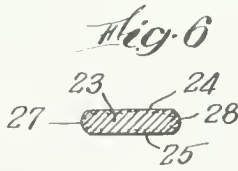
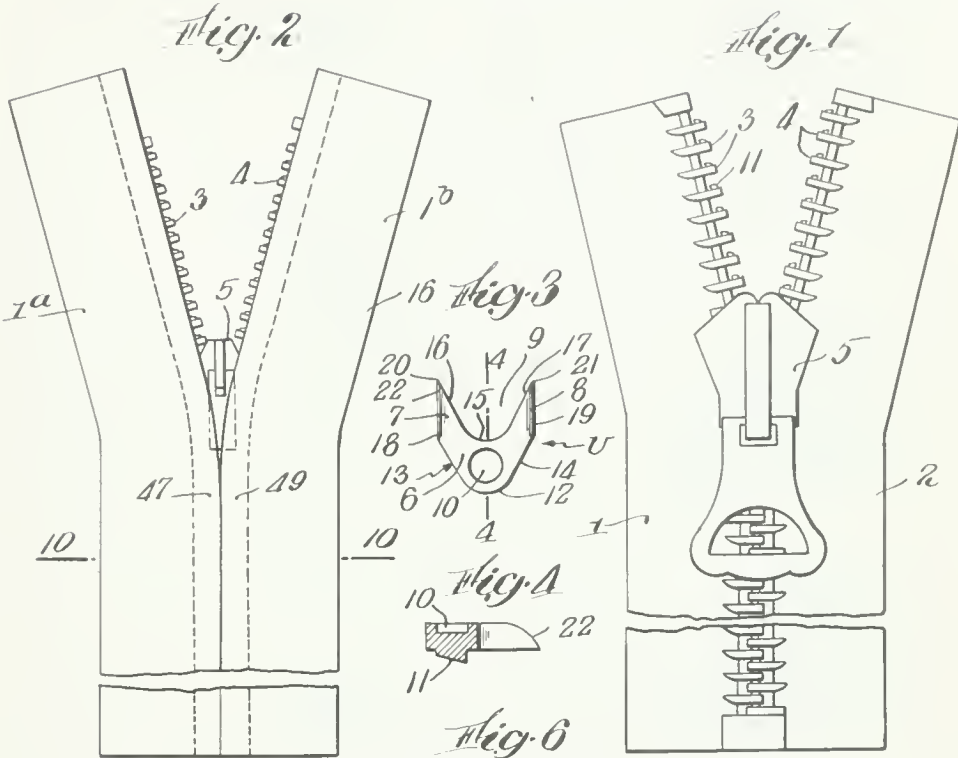
Patented May 10, 1938



METHOD OF MAKING FASTENER UNITS

Filed June 19, 1937

2 Sheets-Sheet 1



Inventor:
 Robert C. Legat,
 by Robert Cushman Woodberry
 Attys.



METHOD OF MAKING FASTENER UNITS

Filed June 19, 1937

2 Sheets-Sheet 2

Fig. 8

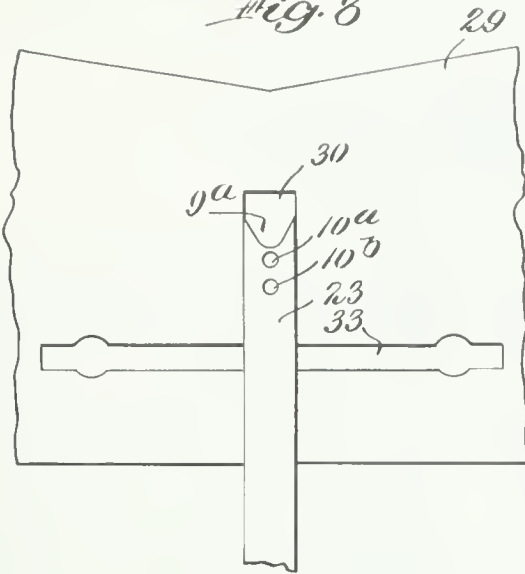


Fig. 11

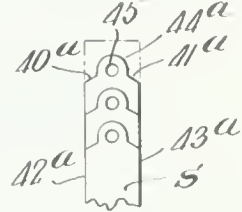


Fig. 12

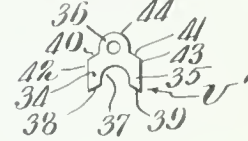


Fig. 13

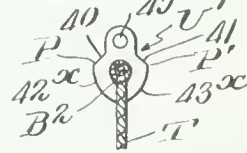


Fig. 9

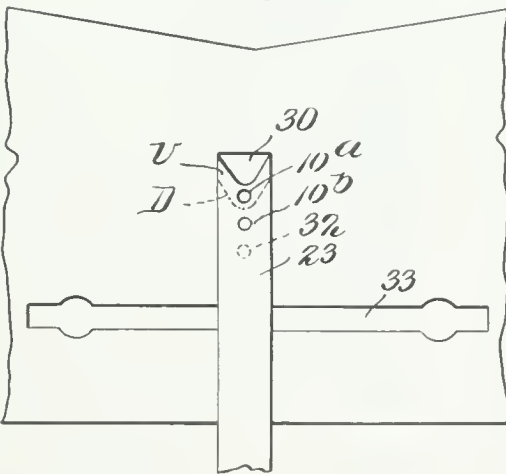


Fig. 14

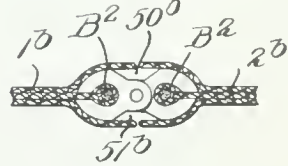
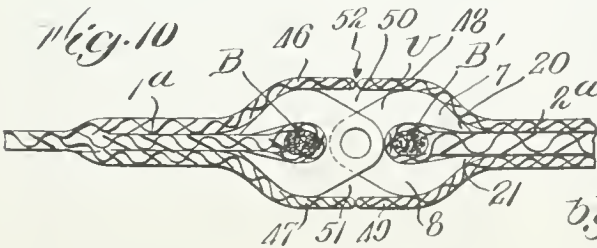
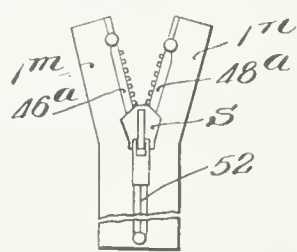


Fig. 15



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UNITED STATES PATENT OFFICE

2,116,726

METHOD OF MAKING FASTENER UNITS

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Application June 19, 1937, Serial No. 149,110

9 Claims. (Cl. 29—148)

This invention pertains to slide fasteners and relates more particularly to a novel method of making fastener units, the present application being a continuation-in-part of my copending application for Letters Patent Serial No. 62,065, filed February 3, 1936 upon which was granted Patent No. 2,097,099, October 23, 1937. A principal object of the present invention is to provide a novel method of making fastener units from sheet metal in such a way as to avoid waste.

A further object is to provide a method of making a fastener unit of such shape and dimensions that the amount of metal in the completed fastener is reduced substantially to a minimum; to provide a method of making a unit having attaching legs or jaws which taper inwardly toward the plane of the stringer thereby eliminating square corners and providing a neat and pleasing appearance; to provide a method of making fastener units such that the completed fastener will be flexible, light in weight, of substantially minimum front-to-rear thickness, and acceptable for use in garments of substantially all types; to provide a method of making a fastener unit especially useful in the covered type of fastener (having cover flaps for concealing the units) whereby such a covered fastener will not be unduly bulky, as compared with the uncovered fastener; and to provide a method of making a fastener unit having attaching jaws whose outer surfaces are smoothly finished and of wear-resistant character well suited to receive the thrust of the cam surfaces of the actuating slider.

Other objects and advantages of the invention will be made manifest in the following more detailed description and by reference to the accompanying drawings, wherein

Fig. 1 is a fragmentary front elevation of a fastener, embodying units made in accordance with the present invention;

Fig. 2 is a view similar to Fig. 1 but illustrating a covered fastener;

Fig. 3 is a view, to large scale, showing the underside of a fastener unit made in accordance with the present invention but before it has been applied to the stringer or flexible support;

Fig. 4 is a section substantially on the line 4—4 of Fig. 3;

Fig. 5 is a fragmentary plan view, to large scale, showing a strip or ribbon of metal having a recess in its end portion such as results from cutting from the strip a fastener unit like that of Fig. 3;

Fig. 6 is a section on the line 6—6 of Fig. 5;

Fig. 7 is a fragmentary plan view, to large

scale, of a bottom die member useful in making fastener units from a strip such as that of Figs. 5 and 6;

Fig. 8 is a view, generally similar to Fig. 7, showing a metal strip or ribbon, like that of Fig. 5, disposed upon the bottom die member and as it appears at the completion of the working stroke of the cooperating punch, and after the latter has been retracted;

Fig. 9 is a view similar to Fig. 8, but showing the ribbon as having been advanced in readiness for the next down stroke of the punch die;

Fig. 10 is a diagrammatic transverse section, to large scale, through a covered fastener, such as that of Fig. 2, employing units of a type herein specifically disclosed, showing the units as anchored to the edge beads of the stringers or flexible supports;

Fig. 11 is a fragmentary plan view of a length of metallic ribbon illustrating an alternative mode of procedure, in accordance with this invention, whereby fastener units of somewhat different shape are produced without waste from the ribbon or strip;

Fig. 12 is a plan view of one of the units produced in accordance with the method illustrated in Fig. 11;

Fig. 13 is a transverse section through a stringer or flexible support, showing one of the units of Fig. 12 secured to the support;

Fig. 14 is a view generally similar to Fig. 10, but to smaller scale, illustrating a covered fastener employing units such as that of Fig. 12; and

Fig. 15 is a view generally similar to Fig. 2, but showing a covered fastener of a slightly different type.

Referring to the drawings, the numerals 1 and 2 (Fig. 1) designate a pair of flexible supports or stringers, each preferably provided with an edge bead and having series 3 and 4 respectively of fastener units fixed to its beaded edge. The fastener comprising these tapes is, as usual, furnished with bottom and top stops and with an actuating slider 5. The units of the series 3 and 4 are all substantially alike, the outer or projecting end of each unit being furnished with a socket in one face and with a corresponding projecting pin 11 at its opposite face. These units, before attachment to the stringer, and in accordance with a preferred embodiment of the invention, are of the general shape of the unit U, as shown in Figs. 3 and 4. The unattached unit comprises the head portion 6 and a pair of spaced anchoring jaws or legs 7 and 8, separated by a recess 9 at the inner end of the unit. The head portion of

each unit, as above referred to, is furnished with a socket opening 10 (Fig. 4) in one face and with a projecting pin 11 at its opposite face.

The outer end of the head portion of the unit is rounded or curved as shown at 12 (Fig. 3) and the lateral edges 13 and 14 of this head portion preferably are substantially straight and diverge from each other, and in the unattached unit form tangents to the curved portion 12. Likewise the recess 9 of the unattached unit has a curved inner wall 15, the curvature of which is substantially identical with the curvature of the end portion 12 of the head of the unit, and the side walls 16 and 17 of the recess are substantially straight and tangent to the curved inner wall 15, being substantially parallel respectively to the lateral outer surfaces 13 and 14 of the head portion, and intersect the outer, substantially parallel surfaces 18 and 19 of the attaching jaws in sharply acute angles at the points 20 and 21, respectively. As a result of the method of making these units now about to be described, the extreme ends of the jaws 7 and 8 are usually somewhat rounded off, as shown at 22, (Fig. 4) so that the tips of the jaws taper both horizontally and vertically.

In accordance with the preferred method of making these units U, a length of metal ribbon 23, of a character suitable for the making of fastener units of this type, preferably such as is not easily corroded by moisture, is first prepared, such ribbon being of a transverse width substantially equal to the distance between the outer edges 18 and 19 of the unit before the latter is attached to its stringer, this distance substantially equaling the maximum front-to-rear thickness of the unit after its attachment to the stringer.

While this metal ribbon 23 may be made merely by shearing sheet metal to the desired width, it is preferred to prepare this ribbon by an operation including drawing or rolling such as to provide smooth, compact outer surfaces, free from burrs and requiring no further finishing operation. Thus, as indicated in Fig. 6, the ribbon 23 has the substantially flat and smooth upper and lower surfaces 24 and 25 and the lateral edges 27 and 28, such edges preferably being slightly rounded. If this ribbon be produced by a cold drawing or cold rolling operation, the metal closely adjacent to the outer surfaces will be more dense than at the central portion of the ribbon, usually with the fiber running lengthwise of the ribbon, and such outer part of the ribbon, for example, the edge portions 27 and 28, will thus be more wear resistant than though the ribbon were produced merely by shearing sheet metal. However, while it is preferred to make the ribbon by drawing or rolling operations, or at least to finish its outer surfaces by rolling or compression, the invention is not necessarily limited to the use of ribbon prepared in this way.

For the performance of the method of the present invention it is preferred to provide a punch and die apparatus comprising, for example, the lower die member 29 (Fig. 7) having an opening 30 provided with a curved wall 12^a corresponding in curvature and dimensions to the curved end 12 of the desired unit. This opening 30 is also provided with substantially straight divergent walls 13^a and 14^a corresponding to the edges 13 and 14 of the unit and with substantially parallel walls 18^a and 19^a corresponding to the edges 18 and 19 of the attaching jaws of the unit and spaced apart a distance substantially equal to the width of the strip 23. The wall W of this opening 30 is substantially straight and per-

pendicular to the walls 18^a and 19^a and is spaced from the most distant part of the curved wall 12^a a distance equal to the maximum length of the unit to be formed. The die 29 is also furnished with one, but preferably two circular openings 31 and 32 corresponding in dimensions to the projection 11 which is formed on each unit, the centers of the openings 31 and 32 being spaced apart a distance substantially equal to the distance between the curved walls 12 and 15 of the unit.

The punch (not shown), which cooperates with the die 29, is provided with a part which substantially fits the opening 30 so as to cooperate with the edges of the opening 30 in forming a shear cut and is also furnished with a pair of plungers adapted to cup the metal down into the openings 31 and 32 but without shearing through the metal. Preferably die 29 is furnished with a slot 33 for the reception of a stripper device (not shown) for lifting the metal from the die 29 after each punching operation. Since this stripper forms no essential part of the present invention, it is not herein illustrated.

In preparation for the operation of making the units U by the use of the punch and die, the extreme end of the metal ribbon or strip 23 is first shaped as shown, for example, at 9^a in Fig. 5, so as to have a recess corresponding to the recess 9 of the desired unit, the ribbon terminating at its opposite edges in acute points 20^a and 20^b. This shaping of the extreme end of the ribbon may be done in any desired manner, although ordinarily by the use of the punch and die, the first operation of the punch and die producing a small piece of waste metal corresponding in shape to the recess 9^a, this being the only waste which is produced during the operation.

Having shaped the end of the ribbon as just described, for example by the use of the punch and die, and assuming that the latter method has been used, the ribbon, at the end of this first operation, will occupy the position shown in Fig. 8, the punch having produced the two socket openings or depressions 10^a and 10^b in the ribbon outside of the limits of the recess 9^a. The punch having now been retracted, the ribbon is advanced to the position shown in Fig. 9, the projection which was formed in the die opening 31 now overlying the edge of the opening 30, while the projection which was initially formed in the die opening 32 now seats in the opening 31 of the die 29 and thus serves accurately to space the ribbon with reference to the opening 30 preparatory to the next descent of the punch. The punch now moves downwardly into the opening 30 and punches out a complete unit U, forming a severing cut or incision along the dotted line D in Fig. 9 and at the same time again cupping the metal down into the opening 32 of the die. It may be noted that the incision at the line D extends completely across the ribbon 23 from one lateral edge to the other of the latter and that this incision intersects the lateral edges in acute angles which define the extreme ends 20 and 21 of the jaw members of the next unit to be cut. The punch is now lifted, the ribbon advanced forwardly one step, and the punch again caused to descend, thus at each stroke of the punch cutting off a complete unit without producing any appreciable waste whatsoever after that resulting from the initial formation of recess 9^a.

Since the metal at the extreme ends of the attaching jaws is very thin, the friction of the punch in shearing the metal tends to draw or

compress these extreme ends so that they assume some such form as indicated at 22 in Fig. 4, the tips of the jaws thus tapering both vertically and horizontally.

Having prepared the units U, these units may be secured to the beaded edge of the stringer by any suitable mechanism such as has commonly been used in this art for uniting independent units to stringer tapes. In Fig. 10, the units U are shown as having been attached to tapes 1^a and 2^a having the edge beads B and B' respectively. Each unit is so disposed that its spaced jaws 7 and 8 straddle the edge bead, and then the jaws 7 and 8 are subjected to lateral pressure tending to cause the metal to flow, thereby bending the jaws so that their tips 20 and 21 approach each other, thus firmly clamping the edge bead between them. When the unit has been finally fixed to the stringer, the tips 20 and 21 lie substantially in the planes of the opposite faces of the stringer tape or may be somewhat indented into the tape, since the pressure tends to compress the tape where it is engaged between the jaws.

The curved inner surface 15 of the recess is so located that when the unit is anchored in place, the unit is of maximum front-to-rear thickness substantially in the vertical front-to-rear plane of the edge bead, the outer surfaces of the attaching jaws now being smoothly curved and the unit tapering in thickness from this point of maximum thickness in both directions, that is to say, toward its outer curved end, and toward its inner end at which the tips of the jaws merge with the surfaces of the tape.

By reason of the fact that the outer curved end of the unit is relatively narrow as compared with the maximum thickness of the unit,—shallow longitudinal channels 50 and 51 are formed at the front and rear of the fastener when the units of the opposite series are interengaged. As illustrated in Fig. 10, the stringer tapes 1^a and 2^a are provided with covering flaps 46 and 47, and 48 and 49, respectively, which, as illustrated, are woven integrally with the tapes 1^a and 2^a, respectively. These covering flaps are designed substantially to cover the units when the fastener is closed and the edges of the flaps at the same side of the fastener substantially meet along a line such as indicated at 52 (Fig. 10). In such an arrangement, the channels 50 and 51 are of assistance in helping to keep the free edges of the flaps 46 and 48 in substantial alignment,—particularly in that type of fastener shown in Fig. 15 in which the slider channels receive the flaps 46 and 48 so that the slider, as it moves up and down, irons the flaps back into the channels 50 and 51.

A fastener of this general type is illustrated in Fig. 15 wherein the stringers 1^m and 1ⁿ are shown as provided with the cover flaps 46^a and 48^a, respectively, and in which the slider S overrides the flaps and, in drawing the opposed series of units together, pulls the free edges of the flaps into substantial engagement along the line 52. If desired, in such an arrangement as that shown in Fig. 15, the flaps 46^a and 48^a may initially consist of a single piece of textile or other sheet material which is secured to the respective stringers so as to extend continuously across the united series of fasteners and which is then cut by means of a knife or other suitable instrument, along the line 52, thereby producing edges which are the exact counterpart of each other and thus capable of covering the units completely. However, these edges are raw edges and it is usually pre-

ferred, as a commercial matter, to make the flaps 47 and 49 as shown for example in Fig. 10, so that they have selvage edges which will withstand the wear of movement of the slider.

In Fig. 2 a different embodiment of covered fastener is illustrated, corresponding more exactly to the arrangement of Fig. 10, the slider channels of the slider 5 (Fig. 2) receiving the series 3 and 4 of the fastener units but not receiving the edges of the covering flaps 47 and 49.

As illustrated in Figs. 11 to 14 inclusive, the invention also contemplates the provision of fastener units of somewhat different shape from those shown in Figs. 3 and 4, for example, although, like the latter, capable of being made without waste of material. Thus, referring to Fig. 12 the unattached unit U' comprises the attaching legs or jaws 34 and 35 and the head portion 36. The attaching or anchoring jaws or legs 34 and 35 are spaced apart by a recess 37, the latter preferably having substantially parallel side walls and an arcuate inner end wall. The free ends of these legs or jaws preferably are inclined, as indicated at 38 and 39, respectively, so as to converge toward the inner end of the recess,—these ends 38 and 39 hereinafter being referred to as the "inner" ends of the unit, while the head 36 is referred to as the "outer" end of the unit. This head 36 is of substantially less width than the main body of the unit, preferably being of an external width not substantially greater than the thickness of the edge bead to which the unit is to be attached,—the head being in fact of substantially the same size and shape as the recess 37. At each side of the head the unit body terminates in inclined shoulders 40 and 41, respectively, which converge toward the outer end of the unit, the outer edges 42 and 43 of the jaws of the unattached unit being substantially parallel, while the end surface 44 of the head is of curved contour. The shoulders 40 and 41 in the unattached unit are substantially parallel to the end surfaces 38 and 39, respectively, of the legs.

This unit, like that of Figs. 3 and 4, may be made very economically and without any waste of material, as indicated diagrammatically in Fig. 11. In thus manufacturing the units, a ribbon or strip S of sheet metal, preferably of the type indicated in Fig. 6 as above described, is provided, such strip having the substantially parallel edges 42^a and 43^a spaced apart substantially the same distance as the outer surfaces 42 and 43 of the unattached unit of Fig. 12. This ribbon or strip S is advanced by successive steps into the field of action of a cooperating die and punch suitably shaped, and which operate in substantially the same manner as the die and punch above referred to, to cut off successive units from the end of the strip. At each operation of the punch an incision is made which extends completely across the width of the strip, such incision comprising the curved central portion 44^a (Fig. 11) and the lateral, divergent straight portions 40^a and 41^a. Each incision completely severs the strip and each incision at the same time forms the inner end of one unit and the outer end of the next unit. Simultaneously with, or before or after the actuation of the cutting punch, the material of the strip is subjected to the operation of a cupping element which forms a projecting pin 45 on one surface of the head and a corresponding socket (not shown) in the opposite face of the head.

It will be noted that, as a result of this mode of procedure, the outer edges 42 and 43 of the

unit are unchanged portions of the original edges 42^a and 43^a of the strip S,—the head 36 of each unit representing that part of the original material which is removed in making the recess 37 of the next unit, while the shoulders 40 and 41 of one unit correspond to the inclined ends 38 and 39 of the jaws of the next unit. Thus no waste whatsoever is produced.

After the units have been formed to the shape shown in Fig. 12, they are attached to the edge bead of the stringer by means of any suitable mechanism, either one-by-one in succession, or in groups in accordance with the type of mechanism employed. If preferred, they may be subjected to some suitable finishing operation before attaching them to the stringer, although this is not necessary in all cases, since the outer edges 42 and 43 at least of the attaching jaws may be made very smooth and with a finished surface in accordance with the above mode of producing the units, providing the ribbon has smooth edges to start with.

In attaching the unit to the edge bead of the stringer, pressure is applied to the spaced legs or jaws 34 and 35 so that the metal is bent and caused to flow until the parts take substantially the position indicated in Fig. 13. The jaws 34 and 35 are thus caused to embrace the edge bead B² of the stringer T, and in thus compressing the unit the end surfaces 38 and 39 of the jaws are brought very nearly into parallel relation and into contact with the opposite faces of the stringer tape, while the outer edges of the jaws are curved as indicated at 42^x and 43^x and caused to assume such a relative position that they diverge from their inner or free ends toward the mid-portion of the unit. Thus in the attached unit the points P and P', which substantially represent the junctions of the surfaces 40 and 42^x and of the surfaces 41 and 43^x, respectively, define the thickest part of the unit. In fact the stringer-engaging portion of the unit, in plan view when attached, is somewhat suggestive of a circular triangle or a conventional heart-shape.

It may be noted that the point of greatest front-to-rear thickness lies substantially in the front-to-rear plane of the points P—P' and that this plane is closely adjacent to the front-to-rear plane of the axis of the bead and that the unit decreases in thickness from this plane P—P' toward both its inner and outer ends.

As illustrated in Fig. 14, when units U' of this latter type are attached to the beaded edges B² of stringer tapes 1^b and 2^b, respectively, longitudinal channels 50^b and 51^b are formed at the front and rear of the closed fastener and such channels are of somewhat greater depth and dimensions than the channels 50 and 51 which are formed by the use of the units U above described. Thus units U', such as shown in Figs. 11 to 14, may sometimes be preferred in making covered fasteners of the type shown in Fig. 15 wherein the slider overrides the covering flaps and is intended to iron the flaps backwardly so as to cause them to lie flat during the use of the fastener.

While certain desirable embodiments of the invention have been described by way of example, it is to be understood that the invention is not necessarily limited to these precise constructions or modes of procedure but is to be regarded as broadly inclusive of any and all equivalents, either in materials or apparatus employed or of process steps, as well as any other sequence of process steps than herein specifically described but which produces the same ultimate result.

I claim:

1. Method of making fastener units for use in slide-actuated fasteners, which comprises as steps providing a length of metal ribbon of a width substantially equaling the desired maximum width of the unit, advancing said ribbon endwise step-by-step into the field of action of cutting and forming devices, and at each successive step severing the ribbon by a single incision which extends completely across the width of the ribbon, said incision including a curved central portion and divergent, substantially straight side portions, the latter intersecting the respective edges of the ribbon in acute angles.

2. Method of making fastener units for use in slide-actuated fasteners, which comprises as steps providing a length of metal ribbon of a width substantially equaling the desired maximum width of the unit, advancing said ribbon endwise step-by-step into the field of cutting and forming devices, and at each successive step severing the ribbon by a single incision which extends completely across the width of the ribbon, said incision having a contour substantially corresponding to the desired shape of the outer end portion of the unit and meeting the respective edges of the ribbon in acute angles.

3. That method of making fastener units for use in slide-actuated fasteners, which comprises as steps providing a length of metal ribbon of a width substantially equal to that of the desired maximum transverse width of the unit, cutting said ribbon transversely, the incision extending across the entire width of the ribbon and being of a contour substantially corresponding to the desired finished shape of the outer end portion of the unit and meeting the respective edges of the ribbon in acute angles which define the extreme inner ends of the attaching jaw portions of the unit, and making a second incision identical in shape with the first but spaced longitudinally of the ribbon a distance equaling the distance by which the outer end of the unit, when attached, shall project beyond the edge of its flexible support.

4. That method of making fastener units for use in slide-actuated fasteners, which comprises as steps providing a length of metal ribbon of a width substantially equal to that of the desired maximum transverse width of the unit, shaping the end of the ribbon to a contour substantially corresponding to the desired shape of the outer end portion of the unit and thereafter making successive spaced, like incisions, each extending across the entire width of the ribbon and each of a contour like that of the shaped end of the ribbon and intersecting the respective edges of the ribbon in acute angles which define the extreme inner ends of the attaching jaws of each successive unit, the first incision being spaced from said shaped end of the ribbon and successive incisions being spaced from the next each by a distance equaling the distance by which the outer end of the unit, when attached, shall project beyond the edge of its flexible support.

5. Method of making like fastener units in succession, each unit having an outer or head portion having a curved end contour and provided with a pin and socket, and a pair of spaced attaching jaws separated by a recess, the inner part of the recess of the unattached unit being of substantially the same contour and dimensions as the head portion of the unit, said method comprising as steps providing a length of metal ribbon of a width substantially equal to the maxi-

5 mum transverse width of the desired unit, said ribbon having edge portions which are hard, dense and wear resistant, cutting units in succession without waste from said ribbon, each by a single incision which extends completely across the width of the ribbon, each incision intersecting the respective edges of the ribbon at points defining the extreme ends of the attaching jaws of the unit, successive incisions being so spaced longitudinally of the ribbon that the outer surfaces of the jaws of each unit consist of unchanged portions of the respective edges of the ribbon.

10 6. Method of making fastener units for use in slide-actuated fasteners which comprises as steps providing a length of metal ribbon having smooth and dense edges such as result from cold working the metal, advancing the ribbon endwise into the field of action of cutting dies, incising the metal by a cut which extends from one edge to the other and of a contour such as to form a recess in the end of the ribbon, said recess having an arcuate inner end and divergent walls which meet the edges of the ribbon in acute angles, cupping the material of the ribbon at a point inwardly of the end of the recess to provide a socket in one face and a pin projecting from the opposite face, again advancing the ribbon relatively to the dies and again actuating the dies to form a second cut, spaced longitudinally of the ribbon from the first, but identical in contour with the first cut, thereby to sever a completed unit from the length of ribbon, said unit having jaw portions which taper toward their free ends.

35 7. Method of making fastener units for use in slide-actuated fasteners which comprises as steps cutting from a length of sheet material a piece

shaped to constitute spaced attaching jaws separated by a recess and which taper acutely toward their free ends, and a head portion of substantially the same contour and dimensions as the recess, and cupping the material of the head to form a socket in one face and a pin projecting from the opposite face.

8. Method of making fastener units for use in slide-actuated fasteners which comprises as steps cutting from a length of metal ribbon a piece shaped to constitute spaced attaching jaws whose outer edges are unchanged portions of the respective edges of the ribbon and which taper acutely toward their free ends, said jaws being separated by a recess having divergent side walls merging with an arcuate inner wall, and a head portion of substantially the same external contour and dimensions as the recess, and cupping the material of the head to form a socket in one face and a pin projecting from the opposite face.

9. Method of making fastener units for use in slide-actuated fasteners which comprises as steps cutting substantially like pieces in succession from a length of metal ribbon in such a way that each piece comprises spaced attaching jaws whose outer edges are unchanged portions of the respective edges of the ribbon, and which taper acutely toward their free ends, said jaws being separated by a recess having divergent walls which meet the edges of the ribbon at acute angles, and a head portion substantially identical in contour and dimensions with the recess, and cupping the material of the head to form a socket in one face thereof and a pin projecting from the opposite face.

ROBERT C. LEGAT.



DEFENDANT'S EXHIBIT "BU"

F. Ulrich Patent No. 2,302,075

Filed Mar. 28, 1939

Patented Nov. 17, 1942



Nov. 17, 1942.

F. ULRICH

2,302,075

SLIDE FASTENER MANUFACTURE

Filed March 28, 1939

4 Sheets—Sheet 1

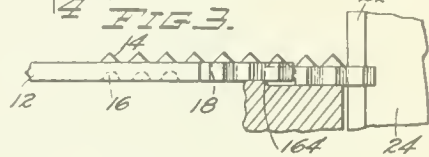
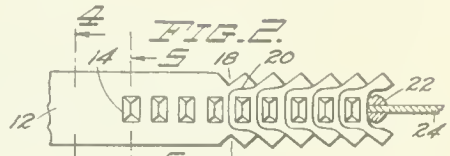
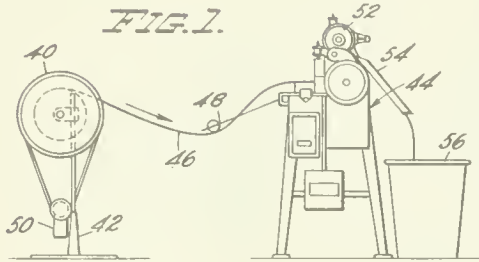


FIG. 4. FIG. 5.

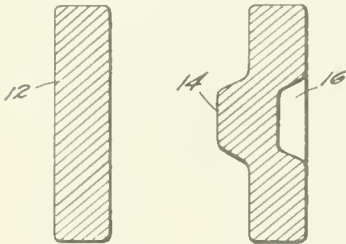


FIG. 6.

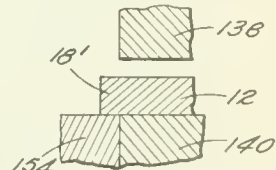
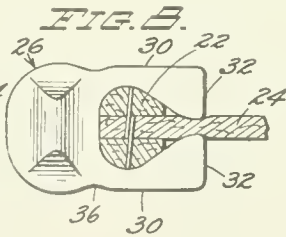
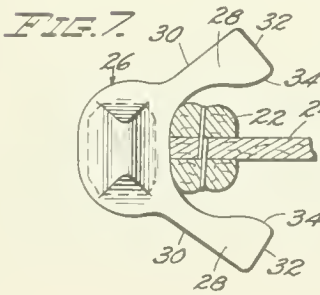
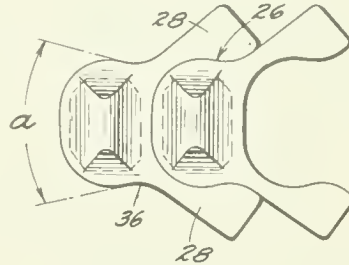


FIG. 9.

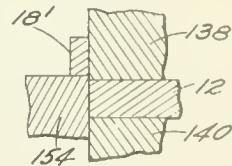
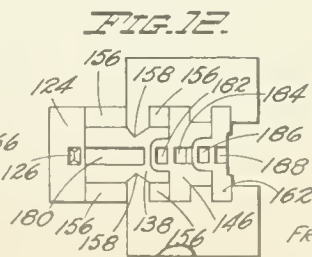
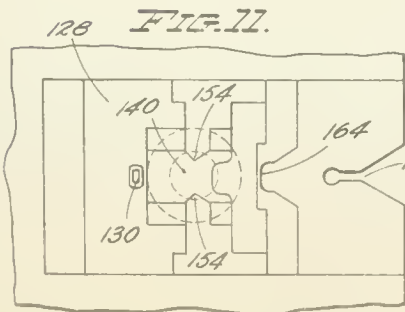


FIG. 10.



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2,302,075

SLIDE FASTENER MANUFACTURE

Filed March 28, 1939

4 Sheets-Sheet 2

FIG. 13.

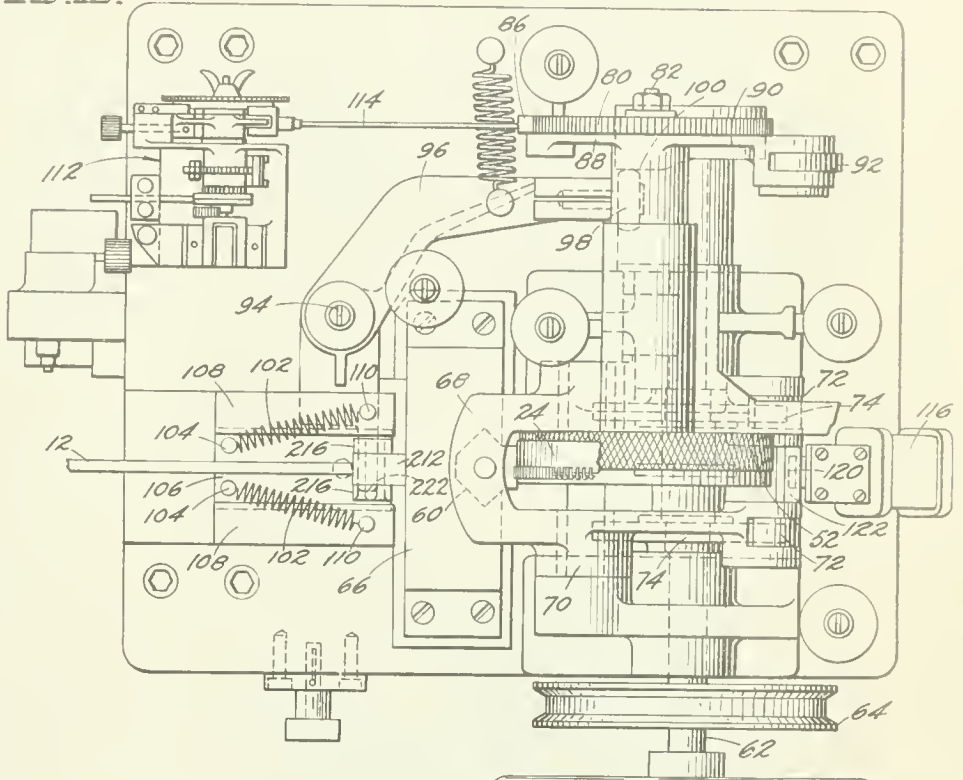


FIG. 14.

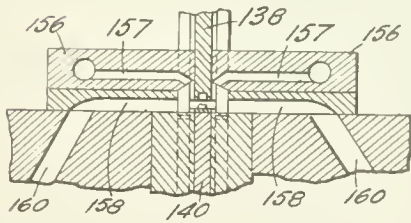


FIG. 16.

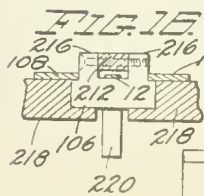
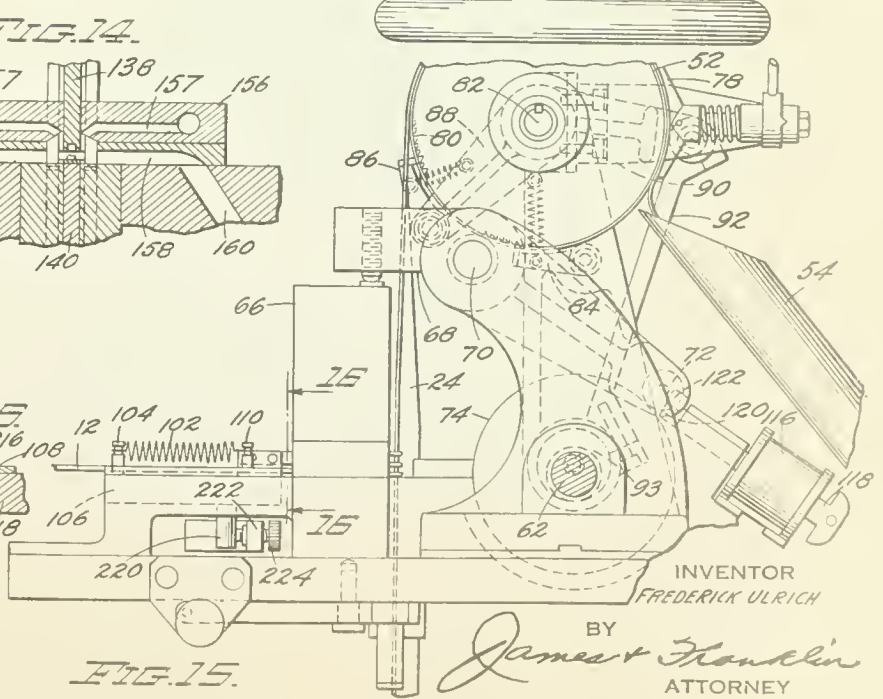


FIG. 15.



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SLIDE FASTENER MANUFACTURE

Filed March 28, 1939

4 Sheets-Sheet 3

FIG. 18.

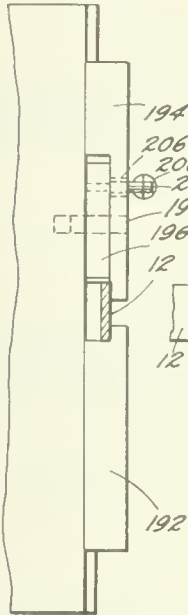


FIG. 17.

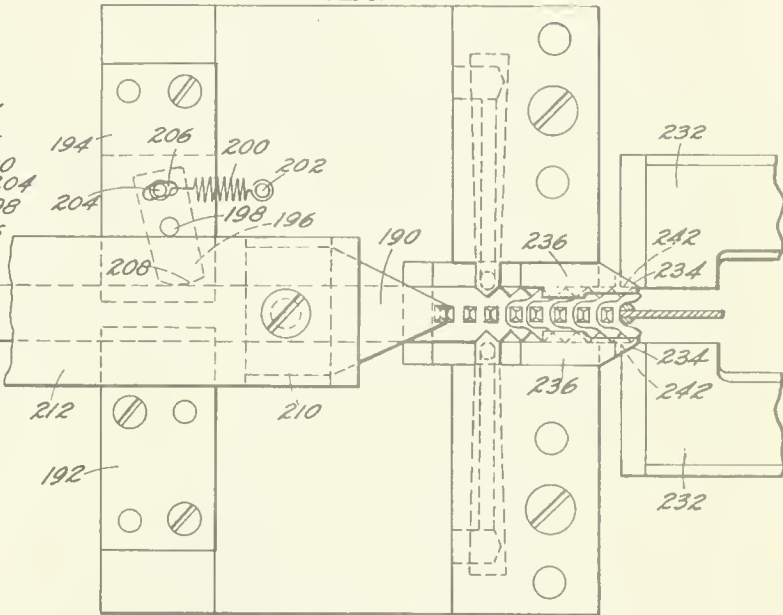


FIG. 19.

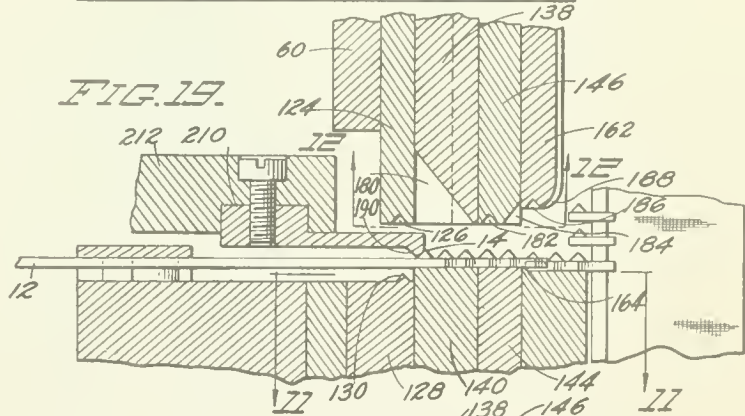
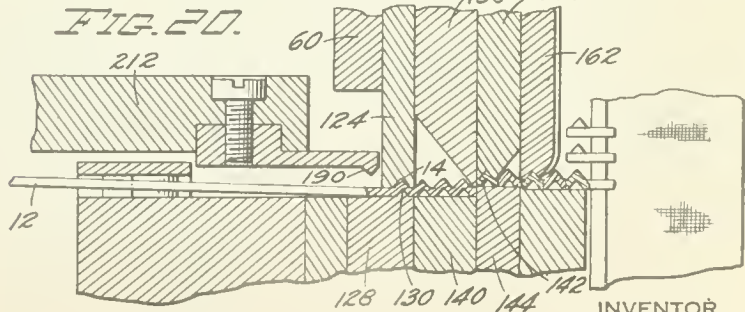


FIG. 20.



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2,302,075

SLIDE FASTENER MANUFACTURE

Filed March 28, 1939

4 Sheets-Sheet 4

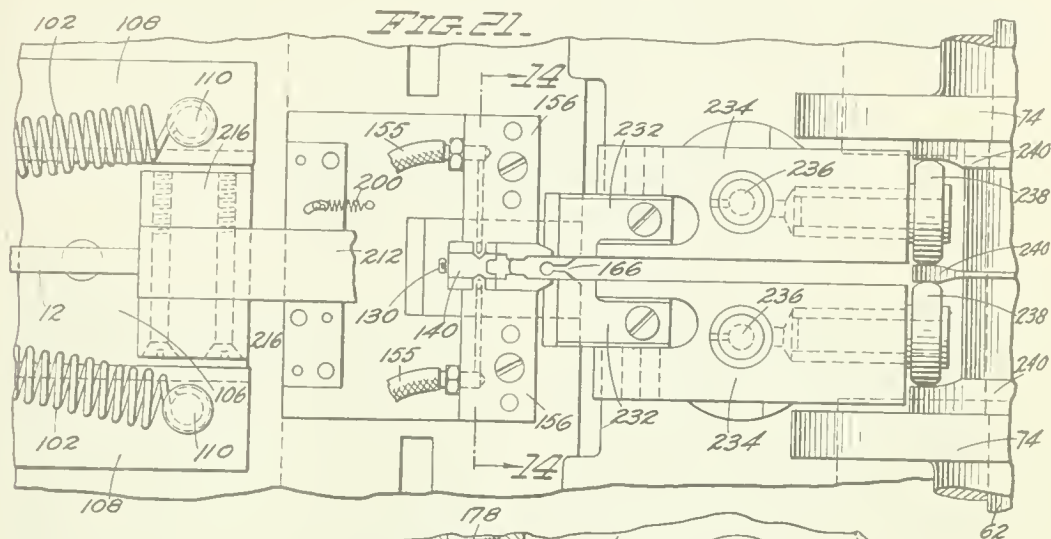


FIG. 23.

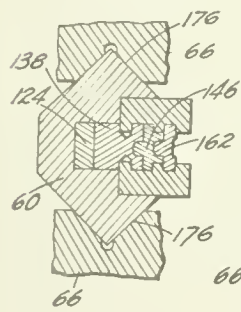
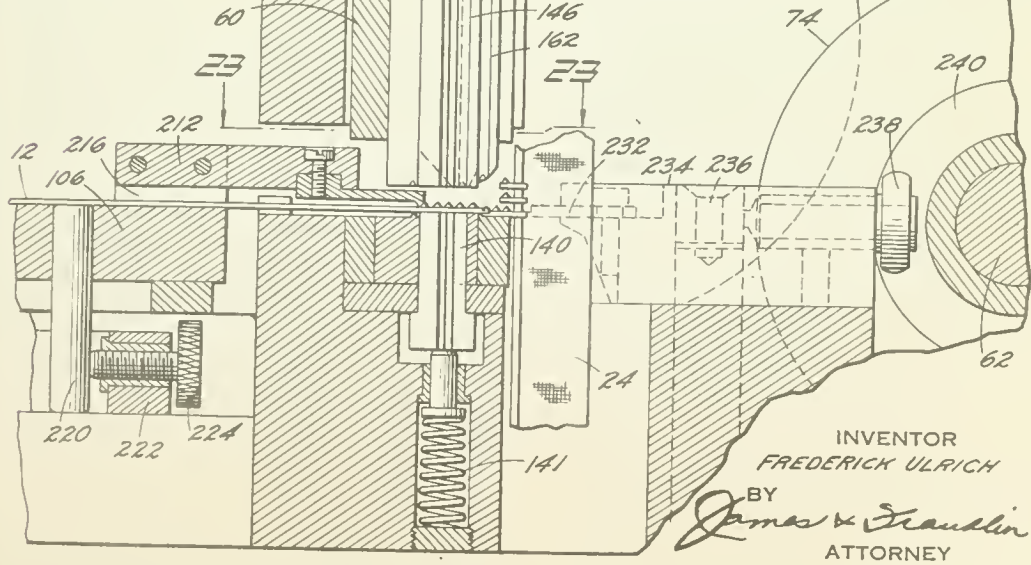


FIG. 22.



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2,302,075

SLIDE FASTENER MANUFACTURE

Frederick Ulrich, Bayonne, N. J., assignor to Conmar Products Corporation, Bayonne, N. J., a corporation of New Jersey

Application March 28, 1939, Serial No. 264,551

13 Claims. (Cl. 153—1)

This invention relates to slide fasteners and more particularly to the manufacture thereof.

The present application is a continuation-in-part of my co-pending application, Serial No. 179,299, filed December 11, 1937, Patent No. 2,221,740, dated November 12, 1940, and entitled "Manufacture of slide fastener elements." It is also a companion application to my co-pending application, Serial No. 264,550, filed concurrently herewith. In said companion application, the manufacture of slide fasteners is divided into two stages, the first stage being the rolling of a smooth wire to form what may be termed a fastener wire, said wire being characterized by a closely spaced series of projections and recesses therealong, and also a closely spaced series of side notches. The spacing and configuration of the parts are such as to correspond to a series of embryo elements, provided that the head of one element is nested fully within and substantially fills the space within the spread jaws of the next element. The first stage of the process is preferably performed in a special rolling apparatus or rolling mill. The second stage of the process consists in severing the aforesaid rolled or deformed wire into separate fastener elements, and attaching the same in spaced relation along the edge of a tape.

The primary object of the present invention is to so design the attaching machine as to adapt the same to receive a smooth flat wire instead of a specially deformed fastener wire, or differently expressed, the primary object of the present invention is to completely eliminate the first stage of the process disclosed in my companion application, thus dispensing with the rolling mill.

Many features of the present attaching apparatus correspond to related features of the attaching apparatus disclosed in my aforesaid companion application, and many objects of the present invention similarly correspond to some of the objects in said application. For example, an object of the present invention is to minimize scrap or waste material when forming the fastener elements. Another object is to eliminate angular disposition of an element when clamped on the tape, either due to the pressure of the severing punch or due to a bend or kink in the wire. Further objects are to facilitate clamping of the jaws of an element on the tape even if the elements are laid out on such a pattern that the jaws of a succeeding element overlap those of a preceding element; to provide ample room for the various punches required in the machine without, however, interposing an excessive num-

ber of severed elements between the wire and the tape; to properly support and confine the severed elements between the end of the wire and the tape, and to prevent improper orientation thereof; to prevent longitudinal separation of the elements; to round the lower edge at the periphery of the head of the element; to so form the elements that they have parallel sides when the jaws are closed on the tape; and to insure thorough removal of bits of scrap or waste, even though these are comparatively minute in dimension.

Other objects of my invention having to do more particularly with the specific type of fastener machine here disclosed are to provide a forming punch for forming the interlocking means, or more specifically, the projections and recesses for the elements; to provide feed means adapted to successfully and accurately feed the metal stock, despite the fact that the stock is perfectly smooth until after it has been acted upon by the punches of the machine; and finally to provide means to interrupt the supply of fastener elements to the tape when a gap or space is to be provided on the tape between stringers, without necessitating interruption of the drive for the feed mechanism, and while keeping the severed elements locked against accidental movement by means of the punch assembly.

To the accomplishment of the foregoing and other objects which will hereinafter appear, my invention consists in the apparatus elements and their relation one to the other, as hereinafter are more particularly described in the specification and sought to be defined in the claims. The specification is accompanied by drawings in which:

Fig. 1 is a side elevation of an apparatus embodying features of the present invention;

Fig. 2 is a plan view of a piece of stock formed and severed adjacent the tape and is explanatory of the invention;

Fig. 3 is a side elevation of the parts shown in Fig. 2;

Fig. 4 is a section through the smooth flat stock used in practicing the present invention;

Fig. 5 is a similar section after operation of the forming punch to form a projection and recess;

Fig. 6 shows the relation of the elements when severed;

Fig. 7 illustrates the application of an element to the tape before closing of the jaws;

Fig. 8 is a similar view after closing of the jaws;

Figs. 9 and 10 illustrate a detail explanatory of the notching of the side edges of the stock;

Fig. 11 is a plan view of the die taken approximately in the plane of the line 11—11 of Fig. 19;

Fig. 12 is an inverted plan view of the punch assembly taken approximately in the plane of the line 12—12 of Fig. 19;

Fig. 13 shows the attaching apparatus in plan;

Fig. 14 is a detail explanatory of an air blast arrangement for the removal of scrap, this figure being a section taken approximately in the plane of the line 14—14 of Fig. 21;

Fig. 15 shows the upper part of the attaching apparatus in elevation;

Fig. 16 is a detail looking in the plane of the line 16—16 of Fig. 15;

Fig. 17 is a plan view explanatory of the feed mechanism, severing die, and clamping plates;

Fig. 18 is an end elevation of the parts shown in Fig. 17;

Fig. 19 is a section through the die with the punches in elevated position;

Fig. 20 is a similar section with the punches in down position;

Fig. 21 is a plan view of a part of the attaching apparatus drawn to enlarged scale;

Fig. 22 is a section taken in elevation through the ram and feed mechanism; and

Fig. 23 is a section through the ram, it being taken approximately in the plane of the line 23—23 of Fig. 22.

The fastener elements are formed from a strip of metal or wire indicated at 12 in Figs. 2 and 3. A section through this wire, drawn to enlarged scale, is shown in Fig. 4, and it will be observed that the wire is simple smooth flat stock. It is fed directly into the present apparatus, and is operated upon by a suitable forming punch to provide interlocking means, or more specifically, to provide a projection 14 on one side and a recess 16 on the opposite side. The recess 16 provides metal for the projection 14, as will be clear from inspection of Fig. 5. The wire 12 is next acted upon to notch the side edges by removing small triangular pieces of scrap, as is shown at 18 in Fig. 2. The object of this is to so shape the jaws of the elements that the jaws are brought to conventional parallel condition when closed. It will be observed in Fig. 2 that the pitch or spacing of the projections 14 and notches 18 is very close, these projections and notches corresponding to fastener elements only if the head of one element is disposed fully within the jaws of the next element, as is indicated at the right hand part of Fig. 2.

The stock is severed on the line 20 (Fig. 2) to form an individual fastener element. The severed element is restored to nested relation between the jaws at the end of the wire 12, and so a series of nested elements are formed and fed along, jaw first, toward the beaded edge 22 of a conventional tape 24. If desired, the elements may be acted upon by a rounding or finishing punch between the severing punch and the tape, all as is described in greater detail hereinafter.

The configuration of the fastener elements is better shown in Fig. 6, in which it will be seen that the head 26 of one element is located within and conforms to the interior of the jaws 28 of the next element, the head filling the space between the spread jaws. In other words, the jaws are so spaced and shaped as to receive the head 26 of the preceding element. In Fig. 7, I show an individual element moved against the beaded edge 22 of tape 24. The jaws are then closed, as

shown in Fig. 8. The outer edges 30 of the jaws change from a divergent position to parallel position, and are preferably spaced apart an amount equal to the width of the head 26. The ends 32 of the jaws are preferably disposed substantially perpendicular to the outer edges 30, so that when the jaws are closed the ends 32 form a bearing surface for the slider of the finished slide fastener, which bearing surface is substantially perpendicular to the tape, as shown in Fig. 8. When the element is completed and fastened to the tape, it does not differ noticeably in external appearance from elements made by more conventional methods. At the inside the jaws are preferably provided with short walls 34 which provide a substantial bearing surface to prevent cutting or penetration of the tape.

Another detail may be described with reference to Fig. 6. The sides of the head are non-parallel, as is indicated by the angle *a*. Differently expressed, the head is necked or narrowed very slightly, as at the point 36, thereby providing an undercut relation between the successive elements. Even if this undercut is only a few thousandths of an inch, it is adequate to prevent longitudinal separation of the elements. When the element is closed there may be slight recess at the point 36 (Fig. 8), but this is not noticeable to the eye, and has been greatly exaggerated in the drawing. The undercut does not prevent transverse separation of the elements, such as takes place when the tape is moved vertically with the clamped element thereon.

The apparatus is shown in Fig. 1 of the drawings. A reel 40 of the flat metal wire is supported on a suitable stand 42. The wire is taken from reel 40 and is fed to a machine generally designated 44. A loop of slack wire 46 may be maintained between the reel 40 and machine 44, as by means of a feeler 48 controlling a motor 50 for intermittently unwinding the reel 40. The wire is intermittently fed toward a tape which is supported in vertical position, the tape being intermittently fed upwardly about a feed drum 52, and thence downwardly through a guide tube 54 into a suitable basket 56.

The head of machine 44 is shown in greater detail in Figs. 13 and 15 of the drawings. It comprises a timing shaft or cam shaft 62, carrying a pulley 64 belted to a driving motor. The punches are carried by a ram 60 (Fig. 13) slidable in a ram housing 66. The ram is reciprocated by a generally U-shaped rocker 68, pivoted on a spindle 70. The ends of the two branches of the rocker carry cam follower rollers 72 engaging cams 74 on cam shaft 62. The tape 24 is fed intermittently upward by means of tape feed drum 52, the tape being held frictionally against the drum by means of a shoe 78 (Fig. 15). Drum 52 is moved by a suitable pawl and ratchet mechanism, the ratchet wheel 80 (Fig. 13) being mounted at the end of a shaft 82 carrying the feed drum 52. Ratchet wheel 80 cooperates with a holding pawl 84 (Fig. 15) and a feed pawl 86, the latter being carried on an arm 88 pivoted on shaft 82 and having an oppositely extending arm 90 oscillated by means of a connecting rod 92 leading to an eccentric 93 (Fig. 15) on cam shaft 62.

The flat wire 12 is intermittently fed in a horizontal direction toward the tape 24 by feed mechanism which is described later, but at this point it may be observed that a feed dog (not shown) is carried on a slide 106, and is retracted or moved outwardly by means of a feed lever

plvoted at 94 (Fig. 13), the arm 96 of the feed lever carrying a cam follower roller 98 engaging a cylindrical cam 100 mounted on cam shaft 62. The forward or feed movement of the slide 106 is caused by pull springs 102 which are connected at one end to pins 104 projecting upwardly from the slide within the stationary gibs 108. The opposite ends of springs 102 are connected to stationary pins 110. The operation of the feed dog, while positive in the rearward direction, is yieldable in the forward direction, the reason for which is later explained.

The apparatus further includes a counter generally designated 112 (Fig. 13), the counter being connected by means of link 114 to a suitable eccentric or crank pin on cam shaft 62. After a predetermined number of fastener elements has been attached to the tape, the counter functions to interrupt the feed of the wire, without, however, interrupting the feed of the tape. More specifically, the counter energizes a solenoid 116 which draws an iron core 118 (Fig. 15) upwardly or inwardly, thereby causing a detent 120 to slip beneath a cross bar 122 extending between the arms of the rocker 68. The parts are so related that detent 120 slides beneath cross bar 122 only when the cross bar is in elevated position, that is, at the rise of the cams 74. The ram 60 is thus held in depressed position, and consequently the formation of additional fastener elements is interrupted until the solenoid 116 is again de-energized.

The punches carried by ram 60 may be described with reference to Figs. 12, 19 and 20 of the drawings. The forming punch is indicated at 124. This is recessed at 126 to form the desired projection on top of the wire. Punch 124 cooperates with a fixed die member 128 (see also Fig. 11), which is provided with a projection 130 to form the recess at the bottom of the wire. Projection 130 may be part of an insert in die member 128, instead of being integral therewith as shown.

The notching and severing punches are combined, and the combined punch is numbered 138. A spring pad 140 is located therebeneath. Punch 138 cuts the wire away from an element beyond the punch. The element 142 (Fig. 20) rests on the top surface of a stationary die member 144. It is held by spring pad 146, nested alongside the punches 124 and 138. In Fig. 19, the punches 124 and 138 and the pad 146 are shown in up position, while the wire 12 is elevated by spring pad 140. In Fig. 20, the punches are shown in down position, and while element 142 is held against die member 144 by pad 146, the punches 124 and 138 have forced the wire 12 down together with the spring pad 140, the wire being sheared completely from the element 142, and being provided with an additional projection and recess. When the ram 60 again rises, the wire 12 is raised by spring pad 140, thus restoring the jaws at the end of the wire to the head of the severed element 142.

The triangular notches (18 in Fig. 2) are formed by the punch 138 cooperating with appropriate stationary die parts. Referring to Fig. 11, the die has stationary die surfaces 154 which are pointed to conform to the desired notches in the wire. The spring pad 140 is indented to accurately receive the points 154. In Fig. 12 it will be seen that the punch 138 is provided with four heels 156, and that the punch is indented at 158 between the heels to mate with the die surfaces 154 of Fig. 11. Figs. 9 and 10

are fragmentary transverse sections at the die surfaces 154. In Fig. 9, the punch 138 is raised and spring pad 140 supports the wire 12 in elevated position. The triangular scrap or notch portion 18' of the wire is disposed about the stationary die surface 154 previously referred to. In Fig. 10, the punch 138 has moved down to the end of its stroke, thereby severing the wire 12 from the triangular piece of scrap 18', the latter remaining on the stationary die surface 154.

Inasmuch as the pieces of scrap are very tiny, it is desirable to insure dependable discharge of the same. Referring to Fig. 21, compressed air is supplied through pipes 155 to blocks 156 on top of the die. Changing now to Fig. 14, the compressed air is led inwardly through passages 157 and is then directed downwardly alongside the punch 138. The compressed air then flows outwardly through the passages 158, carrying the scrap with it, and then downwardly through discharge passages 160 leading to a suitable box beneath the machine.

As a refinement which, however, is by no means essential, I prefer to provide the apparatus with a finishing or rounding punch, this being indicated at 162 in Figs. 19 and 20. It is moved together with the other punches and forms a part of the punch assembly. The stationary die surface therebeneath is depressed and rounded somewhat, as is indicated at 164 in Figs. 3 and 19. The rounding punch 162 forces the subjacent element into the die curvature at 164, and thereby rounds the lower edge of the head. In Fig. 11 the downward step of the die surface is clearly indicated at 164, and its outline conforms to the exterior of the open-jawed fastener element. The fastener element remains at the slightly lower elevation of the right-hand part of the die surface until it reaches the tape and tape guide 166. Reverting to Figs. 2 and 3, there are five severed elements between the wire 12 and the tape 24, and the rounding punch operates upon the middle one of these five elements. The last two elements are always at the lower die level. The middle element is initially at the upper die level, but is moved to the lower die level by the rounding punch. The difference in elevation may be very slight, say $\frac{1}{1000}$ of an inch.

The mounting of the punch assembly is shown in Fig. 22, in which it will be seen that the forming punch 124 may be adjusted by means of a screw 168; the notching and severing punch 138 is adjusted by means of a screw 170; and the rounding punch 162 is adjusted by means of a screw 172. The spring pad 146 is nested between the punches 138 and 162, and is yieldably urged downward by means of a spring 174. The entire punch assembly is carried by ram 60 which is reciprocable in the guide or ways of ram housing 66. The relation between ram 60 and rocker 68 may be adjusted by screw 178. Fig. 23 shows the forming punch 124, the notching and severing punch 138, the spring pad 146, the rounding punch 162, and the ram 60, which in turn has its edges received in guides or ways 176 formed in the ram housing 66. Fig. 22 also shows the spring 141 supporting the spring pad 140 of the die.

It may be pointed out, with reference to Fig. 12, that the punch 138 is cut away at 180 to clear the projections on the wire reaching the cutting edge of the punch. The spring-pressed pad 146 is recessed at 182 to fit around the projection of the element being severed from the wire, hence

the pad acts as a locating pad to insure a uniform location of the periphery of the head about the projection and recess. The spring pad 146 is cut away at 184 to clear the projection of the next element. The rounding punch 162 is recessed at 186 to fit about the projection of the element being rounded, in order not to flatten or deform the element. This punch is also cut away at 188 to clear the projection of the next element. These recesses are also shown in Fig. 19, the severing punch 138 being cut away at 180; the spring pad 146 being recessed at 182 and cut away at 184; and the rounding punch 162 being recessed at 186 and cut away at 188.

To make the feed of the wire positive and accurate, it is fed by means of a dog 190 (Fig. 19) which bears against the most recently formed projection on the wire. The dog may be rigidly mounted because no vertical movement is required. I prefer to feed the wire with the aid of the projection thereon, even though this necessitates movement of the feed dog 190 beneath the forming punch 124, as is clearly shown in Fig. 19. Feed dog 190 is retracted to the position shown in Fig. 20 before the punch descends. There is little or no tendency for the wire to move back with the feed dog, because the wire is smooth, and any such tendency is adequately resisted when using an undercut relation between the severed elements, such as was heretofore described in connection with Fig. 6. A check dog or lock for the flat wire is therefore optional rather than essential, but such a lock is shown in Figs. 17 and 18 of the drawings.

The wire 12 moves between guides 192 and 194. Guide 194 is cut away to receive a lock 196 pivoted at 198 and normally urged in clockwise direction by means of a spring 200, the right-hand end of which is carried by a stationary pin 202, and the left-hand end of which is connected to a pin 204 projecting upwardly from lock 196 and passing through an appropriate slot 206. The end 208 of the lock 196 is made eccentric with respect to the center 198, and the operation is such that the wire 12 is automatically locked against rearward movement, though no substantial resistance is offered to forward movement.

The feed dog 190 is rigidly secured at 210 to an arm 212 (Figs. 17, 19 and 20) which in turn is rigidly secured to the slide 106 (Figs. 13, 15, 16, 21 and 22). In the present case, arm 212 is fixedly mounted between ears 216 formed integrally with and projecting upwardly from the slide 106. The slide 106 is reciprocable in guides or ways formed in a part 218 (Fig. 16) of the machine, the slide being held in position by means of the gibs 108. A pin 220 (Figs. 15, 16 and 22) depends from the slide 106 and is operated upon by the end 222 of the feed arm 96, through an adjusting screw 224. Inasmuch as the part 222 of the feed arm bears against one side only of pin 220, (it being cut away on the opposite side of the pin), the slide is moved positively toward the left, while its movement toward the right is solely under the influence of the feed springs 102.

When producing a gap or space between stringers the punch assembly is locked in its down position, as shown in Fig. 20, and the forming punch 124 is therefore disposed directly in front of the then retracted feed dog 190. The feed cam 100 (Fig. 13) continues its rotation, but the feed dog, and with it the slide 106 and the feed arm 96, are held in retracted position. The parts may vibrate slightly if there is a substantial clearance

between the end of the feed dog 190 and the punch 124, but this vibration, even if permitted, is harmless, and in practice may be reduced to a negligible amount by using only a slight clearance between the feed dog and the forming punch. Locking the ram in down position eliminates unnecessary reciprocation, and avoids moving the jaws at the end of the wire repeatedly into and out of engagement with the head of the element last severed.

The endmost element is clamped on the tape by an oppositely movable pair of clamping plates. Referring to Figs. 21 and 22, the clamping plates 232 are secured to levers 234 pivoted at 236. The other ends of the levers 234 carry cam followers 238 which run between cylindrical cams 240, carried on the main shaft 62 of the machine. The cams are so shaped as to oppositely move the clamping plates. Referring now to Fig. 17, it will be seen that the corners 242 of clamping plates 232 are so located as to engage the jaws of the endmost element and at the same time to clear the jaws of the element next to the end. The clamping plates are thinned to come beneath the ends 234 of guides or rails 236 which confine and guide the severed elements. When the clamping plates 232 move together, they compress the spread jaws of the endmost element from the open condition of Figs. 17 and 7, to the closed condition of Fig. 8.

It is believed that the construction and operation of the present invention, will be apparent from the foregoing detailed description. Flat wire is fed to a single machine where it is operated upon by a forming punch to form a projection and recess, and by a severing and notching punch which removes triangular pieces of waste and which severs the wire of the fastener elements so shaped that the head of one element is nested within and substantially fills the space of the spread jaws of the next element. The elements are kept in nested relation and are fed toward an intermittently moved tape where the endmost element is clamped on the tape. If desired, a finishing operation such as that produced by the rounding punch may be applied to the elements between the cutting punch and the tape. The movement of the tape disengages the attached element from the next element, whereupon the series is again advanced to bring another element astride the tape.

In respect to timing, it may be explained that in the first part of the machine the ram descends, and then rises, while the feed dog is retracted. The feed dog then advances and returns, whereupon the ram again descends. In the meantime, in the second part of the machine, the jaws of the endmost element are clamped by the clamping plates, and in this part of the machine the timing is such that the clamping plates are open when the tape rises with the previously clamped element. The timing relation between the two parts of the machine is not at all critical, but it will be understood that the feed dog must move forward after the tape rises with the previously attached element, and that at this time the clamping plates must be wide open. The clamping plates should not be closed until after the feed dog has moved forward.

When a predetermined number of elements have been attached to the tape, as determined by the counter, the counter energizes the solenoid, which holds the ram down, and this in turn holds the feed dog back. The tape continues to be fed by the pawl and ratchet mechanism operating the tape drum.

The many advantages of the invention will also be understood from the detailed description. The invention produces only a small amount of scrap. It utilizes a simple, smooth flat wire, and eliminates die rolling to form embryo elements. The elements are of generally conventional type in that the outer walls of the jaws come into substantially parallel relationship when closed, while the ends of the jaws are substantially perpendicular to the tape. The feed of the wire is made a positive, predetermined amount by operating the feed dog against a projection formed on the wire after the wire has already been operated upon by the forming punch. Locking the ram in down position to provide a gap space prevents loosening of the fit between elements, and automatically interrupts the movement of the feed dog. The use of a series of severed elements provides room for the punches and the associated spring pad. It frees the jaws of the endmost element for the clamping operation, and it avoids angular positioning of the element, as by reason of the punch thrust or a bend in the wire. The sides of the head are non-parallel and converge so as to provide an undercut of the elements after they are severed and engaged, and this prevents longitudinal separation. The nesting of the elements prevents improper orientation as they are moved toward the tape.

It will be apparent that while I have shown and described my invention in a preferred form, many changes and modifications may be made in the structure disclosed, without departing from the spirit of the invention defined in the following claims.

I claim:

1. Apparatus for the manufacture of slide fasteners, said apparatus comprising means to guide a smooth, flat wire, a forming punch movable transversely of the wire, said punch functioning to form a recess on one side and a projection on the opposite side of the wire, a feed dog riding beneath said punch when said punch is elevated and bearing against said projection formed by said punch in order to positively feed said wire, and timing means whereby said feed dog is retracted from the path of the punch when the punch descends.

2. Apparatus for the manufacture of slide fasteners, said apparatus comprising means to guide a smooth, flat wire, a forming punch movable transversely of the wire, said punch functioning to form a recess on one side and a projection on the opposite side of the wire, a feed dog riding beneath said punch when said punch is elevated and bearing against said projection formed by said punch in order to positively feed said wire, timing means whereby said feed dog is retracted from the path of the punch when the punch descends, and a severing punch movable transversely of the wire for severing the wire into fastener elements having a head with spread jaws projecting forwardly therefrom, the head being of such dimension as to fill the space between the jaws.

3. Apparatus for the manufacture of slide fasteners, said apparatus comprising means to intermittently feed a tape, means to guide a smooth, flat wire toward the tape, a forming punch movable transversely of the wire, said punch functioning to form a recess on one side and a projection on the opposite side of the wire, a feed dog riding beneath said punch when said punch is elevated and bearing against said projection formed by said punch in order to positively feed

said wire, resilient means urging the feed dog forward, a feed cam for positively retracting the feed dog when the punch descends, a severing punch movable transversely of the wire for severing the wire into fastener elements, clamping plates for clamping the elements to the tape, a counter, and means responsive to the counter to lock the punch in depressed position, whereby the feed dog is held against forward movement by the punch, in order to provide a gap or space between stringers.

4. Apparatus for the manufacture of slide fasteners, said apparatus comprising means to intermittently feed a tape, means to guide a smooth, flat wire toward the tape, a forming punch movable transversely of the wire, said punch functioning to form a recess on one side and a projection on the opposite side of the wire, a feed dog riding beneath said punch when said punch is elevated and bearing against said projection formed by said punch in order to positively feed said wire, resilient means urging the feed dog forward, a feed cam for positively retracting the feed dog when the punch descends, a severing punch movable transversely of the wire for severing the wire into fastener elements having a head with spread jaws projecting forwardly therefrom, the head being of such dimension as to fill the space between the jaws, a punch-operating cam, a rocker arm between said cam and the punch, clamping plates for clamping the jaws of the endmost element to the tape, a counter, means responsive to the counter to lock the rocker arm in outermost position with the punch in depressed position, whereby the feed dog is held against forward movement by the punch, in order to provide a gap or space between stringers on the continuous tape.

5. Apparatus for the manufacture of slide fasteners, said apparatus comprising means to guide a smooth, flat wire, a forming punch movable transversely of the wire, said punch functioning to form interlocking means on opposite sides of the wire, a severing punch movable transversely of the wire for severing the wire into fastener elements, and a reciprocal feed dog for intermittently feeding the wire past the punches, said feed dog being so dimensioned and mounted that it acts upon the interlocking means formed by the forming punch in order to provide a positive feed movement for the wire.

6. In the manufacture of slide fasteners having fastener elements with approximately parallel sides and jaws with ends that are approximately perpendicular to the sides for best cooperation with a slider, said jaws being narrowed to much smaller dimension adjacent the head, the method which includes intermittently feeding a tape, intermittently feeding a smooth, flat wire toward the tape, said wire having a width just equal to the width of an element with spread jaws, each of the repeated feed distances equaling only a small fraction of the length of an element, operating upon the wire to form a recess on one side of the wire and a projection on the opposite side of the wire, and to cut away small triangular pieces of scrap in order to notch the side edges of the strip to conform to the outer ends of spread jaws having the aforesaid approximately perpendicular ends of such dimension that when the jaws are closed their sides are substantially parallel, and to sever the strip away from a small projecting piece of the strip, the severance being on an outline such as to define fastener elements with the head of one element

nested fully within and substantially filling the space within the spread jaws of the next element, whereby the elements are formed without scrap other than the aforesaid small triangular pieces of scrap at the side edges of the wire, restoring the wire and severed element together again in nested relation, intermittently moving the nested severed elements toward the tape, and clamping the jaws of the endmost element on the tape in order to secure the element to the tape, while giving the element approximately parallel sides.

7. Apparatus for the manufacture of slide fasteners having fastener elements with approximately parallel sides and jaws with ends that are approximately perpendicular to the sides for best cooperation with a slider, said jaws being narrowed to much smaller dimension adjacent the head, said apparatus comprising means to guide a flat, smooth wire toward a tape, said wire having a width just equal to the width of an element with spread jaws, punches movable transversely of the wire, said punches operating to form a recess on one side of the wire and a projection on the opposite side of the wire, said punches further operating to sever the wire from a piece of the wire projecting beyond the severing punch and corresponding to one element, the outline of the severing punch being such that the projecting piece constitutes a fastener element having a head with spread jaws projecting forwardly therefrom, the head being of such dimension as to fill the space between the jaws, and said jaws having the aforesaid approximately perpendicular ends of such dimension that when the jaws are closed their sides are substantially parallel, a spring pad beneath the wire at the punch to restore the wire to the element previously severed therefrom, feed means to intermittently feed the wire to the punches and tape, each of the repeated feed distances equalling only a small fraction of the length of an element, and clamping plates at the tape for clamping the elements to the tape, said plates having approximately parallel working faces when closed.

8. Apparatus for the manufacture of slide fasteners having fastener elements with approximately parallel sides and jaws with ends that are approximately perpendicular to the sides for best cooperation with a slider, said jaws being narrowed to much smaller dimension adjacent the head, said apparatus comprising means to guide a smooth, flat wire toward a tape, said wire having a width just equal to the width of an element with spread jaws, punches movable transversely of the wire, said punches functioning to form a recess on one side and a projection on the opposite side of the wire, and further functioning to sever the wire from a piece of the wire projecting beyond the severing punch, and corresponding to one element, the outline of the punch being such that the projecting piece constitutes a fastener element having a head with spread jaws projecting forwardly therefrom, the head being of such dimension as to fill the space between the jaws, and said jaws having the aforesaid approximately perpendicular ends of such dimension that when the jaws are closed their sides are substantially parallel, a spring pad beneath the wire at the punch to restore the wire to the element previously severed therefrom, feed means to intermittently feed the wire to the punches and tape, each of the repeated feed distances equalling only a small fraction of the length of an element, the punch being spaced from the tape by an amount such that a series

of severed elements nested together with the head of each filling the jaw space of the next lie between the punch and the tape, a rounding punch between said severing punch and said tape, said rounding punch functioning to round the lower peripheral edge of the head of the element, and clamping plates at the tape for clamping the endmost element to the tape, said plates having approximately parallel working faces when closed.

9. Apparatus for the manufacture of slide fasteners having fastener elements with approximately parallel sides and jaws with ends that are approximately perpendicular to the sides for best cooperation with a slider, said jaws being narrowed to much smaller dimension adjacent the head, said apparatus comprising means to guide a smooth, flat wire, punch and die mechanism including a plurality of punches movable transversely of the wire, said punches functioning to form a recess on one side and a projection on the opposite side of the wire, and functioning to cut small triangular shaped pieces of metal from the sides of the wire, and further functioning to sever the wire, the outline of the severing punch being such that the severed piece constitutes a fastener element having a head with spread jaws, the head being of such dimension as to fill the space between the jaws, and said jaws having the aforesaid approximately perpendicular ends of such dimension that when the jaws are closed their sides are substantially parallel, air blast means for helping remove said small triangular pieces of scrap, and feed means to intermittently feed the wire to the punches, each of the repeated feed distances equalling only a small fraction of the length of an element.

10. Apparatus for the manufacture of slide fasteners having fastener elements with approximately parallel sides and jaws with ends that are approximately perpendicular to the sides for best cooperation with a slider, said jaws being narrowed to much smaller dimension adjacent the head, said apparatus comprising means to guide a smooth, flat wire toward a tape, punch and die mechanism including a plurality of punches movable transversely of the wire, said punches functioning to form a recess on one side and a projection on the opposite side of the wire, and functioning to cut small triangular shaped pieces of metal from the sides of the wire, and further functioning to sever the wire from a piece of the wire projecting beyond the severing punch, the outline of the punch being such that the projecting piece constitutes a fastener element having a head with spread jaws projecting forwardly therefrom, the head being of such dimension as to fill the space between the jaws, and said jaws having the aforesaid approximately perpendicular ends of such dimension that when the jaws are closed their sides are substantially parallel, a spring pad beneath the punch to restore the wire to the element previously severed therefrom, stationary die surfaces beneath the wire at opposite sides of the spring pad cooperating with one of the aforesaid punches for removing the small triangular shaped pieces of scrap, air blast means for helping discharge said triangular pieces of scrap, feed means to intermittently feed the wire to the punches and tape, each of the repeated feed distances equalling only a small fraction of the length of an element, and clamping plates at the tape for clamping the elements to the tape, said plates having approximately parallel working faces when closed.

11. Apparatus for the manufacture of slide fasteners having fastener elements with approximately parallel sides and jaws with ends that are approximately perpendicular to the sides for best cooperation with a slider, said jaws being narrowed to much smaller dimensions adjacent the head, said apparatus comprising means to guide a smooth, flat wire having a width just equal to the width of an element with spread jaws, a punch and die operating to form a recess on one side of the wire and a projection on the opposite side of the wire, and operating to sever the wire, said die having a generally keyhole shaped slot for supporting and guiding an upwardly fed tape having a beaded edge, said die further having a convex cutting portion shaped to conform to the head of the element being severed, said die further comprising a depressible spring pad fitting within and mating with said convex cutting portion, said pad lifting the wire clear of the die for forward feed after formation of the projection and recess, said punch having a concave side mating with the aforesaid convex die portion, the arrangement being such that, when the punch descends, it severs the wire from an element supported on the stationary die portion at the end of the wire, the element being left stationary on the die while the wire is punched downwardly away from the same, the outline of the punch and die being such that the severed piece constitutes a fastener element having a head with spread jaws projecting forwardly therefrom, the head being of such dimension as to fill the space between the jaws, and said jaws having the aforesaid approximately perpendicular ends of such dimension that when the jaws are closed their sides are substantially parallel, and feed means to intermittently feed the wire to the punch and die, each of the repeated feed distances equalling only a small fraction of the length of an element.

12. Apparatus for the manufacture of slide fasteners having fastener elements with approximately parallel sides and jaws with ends that are approximately perpendicular to the sides for best cooperation with a slider, said jaws being narrowed to much smaller dimension adjacent the head, said apparatus comprising means to guide a smooth, flat wire, a punch and die functioning to form a recess on one side and a projection on the other side of the wire, and further functioning to cut small, triangular pieces of scrap to give the jaws the desired perpendicular ends, and further functioning to sever the wire, said die having a generally key-hole shaped slot for supporting and guiding an upwardly fed tape having a beaded edge, said die further having a convex cutting portion shaped to conform to the head of the element being severed, said die further comprising two pointed or triangular-shaped side pieces for cutting notches in the side edges of the wire, said die further comprising a depressible spring pad fitting within and mating with said convex cutting portion and triangular cutting portions, said pad lifting the wire clear of the die for forward feed after formation of the projection and recess, said punch having a concave

side mating with the aforesaid convex die portion, said punch further having triangularly grooved channels in the sides mating with the aforesaid triangular die portions, the arrangement being such that, when the punch descends, it severs the wire from an element supported on the stationary die portion at the end of the wire, and further severs the wire from two triangular pieces of scrap supported on the aforesaid triangular die portions, the element and scrap being left stationary on the die while the wire is punched downwardly away from the same, the outline of the punch and die being such that the severed piece constitutes a fastener element.

13. Apparatus for the manufacture of slide fasteners having fastener elements with approximately parallel sides and jaws with ends that are approximately perpendicular to the sides for best cooperation with a slider, said jaws being narrowed to much smaller dimension adjacent the head, said apparatus comprising means to guide a smooth, flat wire, punch and die mechanism functioning to form a recess on one side and a projection on the opposite side of the wire, and functioning to cut small triangular shaped pieces of metal from the side of the wire, and further functioning to sever the wire, said die having a generally keyhole shaped slot for supporting and guiding an upwardly fed tape having a beaded edge, said die further having a convex cutting portion shaped to conform to the head of the element being severed, said die further comprising two pointed or triangular-shaped side pieces for cutting notches in the side edges of the wire, said die further comprising a depressible spring pad fitting within and mating with said convex cutting portion and triangular cutting portions, said pad lifting the wire clear of the die for forward feed after formation of the projection and recess, said punch having a concave side mating with the aforesaid convex die portion, said punch further having triangularly grooved channels in the sides mating with the aforesaid triangular portions, the arrangement being such that, when the punch descends, it severs the wire from an element supported on the stationary die portion at the end of the wire, and further severs the wire from two triangular pieces of scrap supported on the aforesaid triangular die portions, the element and scrap being left stationary on the die while the wire is punched downwardly away from the same, the outline of the severing punch being such that the severed piece constitutes a fastener element having a head with spread jaws, the head being of such dimension as to fill the space between the jaws, and said jaws having the aforesaid approximately perpendicular ends of such dimension that when the jaws are closed their sides are substantially parallel, air-blast means for moving said small triangular pieces of scrap outwardly from the triangular die portions, and feed means to intermittently feed the wire to the punch and die, each of the repeated feed distances equalling only a small fraction of the length of an element.

FREDERICK ULRICH,



DEFENDANT'S EXHIBIT "BV"

F. Ulrich Patent No. 2,338,884

Filed Nov. 1, 1940

Patented Jan. 11, 1944



Jan. 11, 1944.

F. ULRICH

2,338,884

APPARATUS FOR MAKING SLIDE FASTENERS

Filed Nov. 1, 1940

5 Sheets-Sheet 1

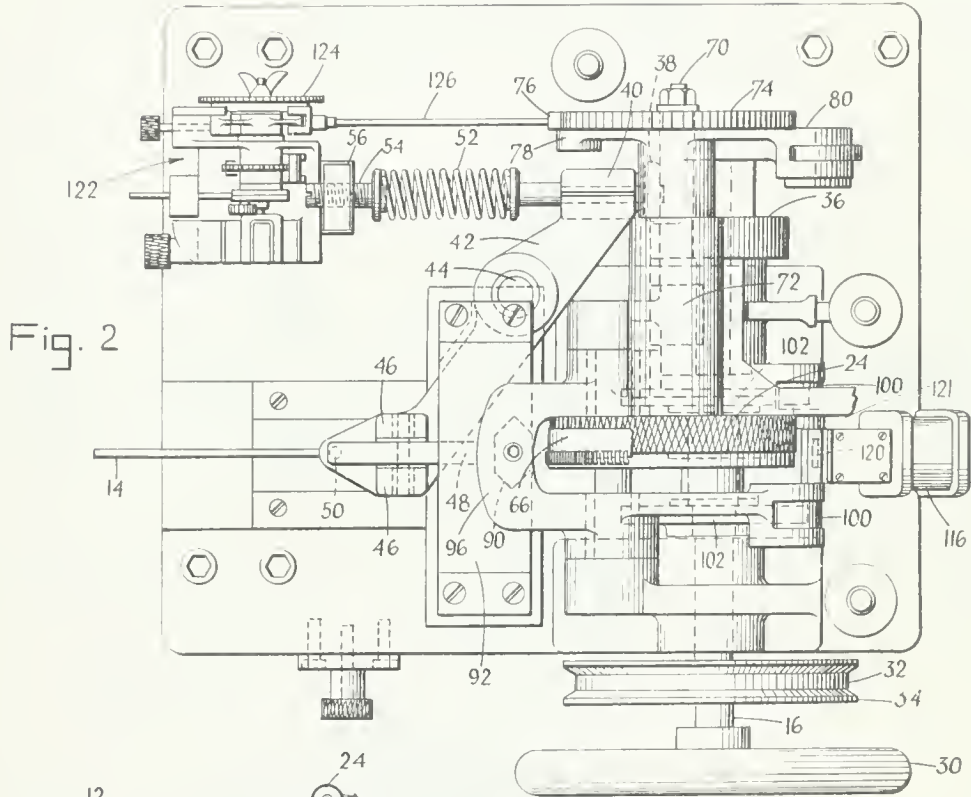


Fig. 2

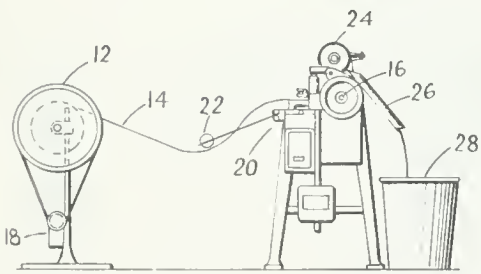


Fig. 1

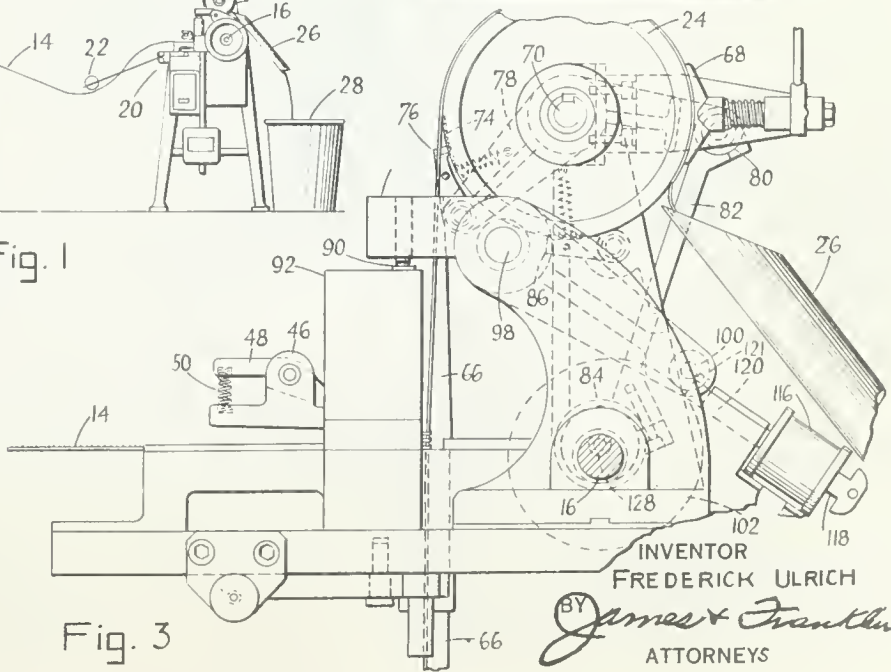


Fig. 3

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2,338,884

APPARATUS FOR MAKING SLIDE FASTENERS

Filed Nov. 1, 1940

5 Sheets—Sheet 2

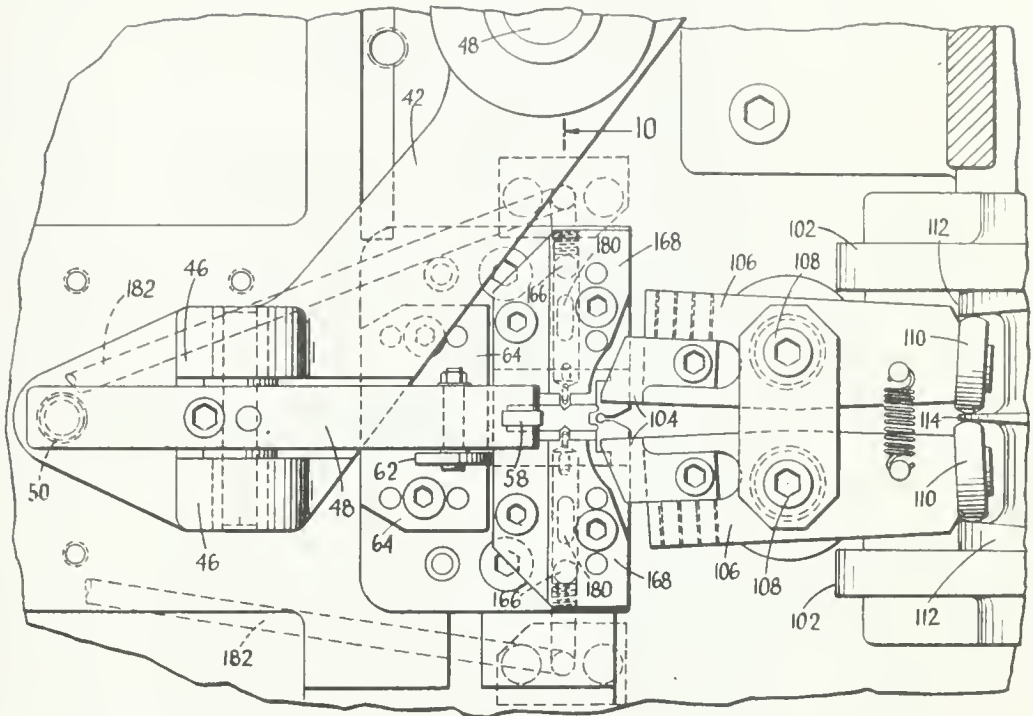


Fig. 4

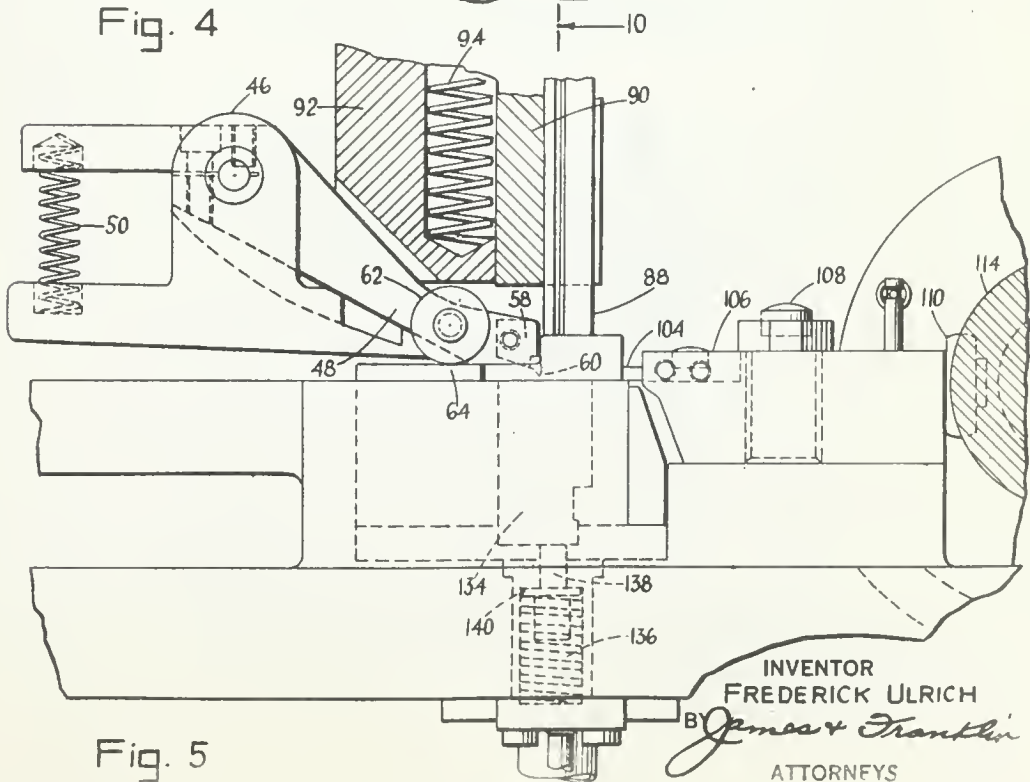


Fig. 5

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Filed Nov. 1, 1940

5 Sheets-Sheet 3

Fig. 6

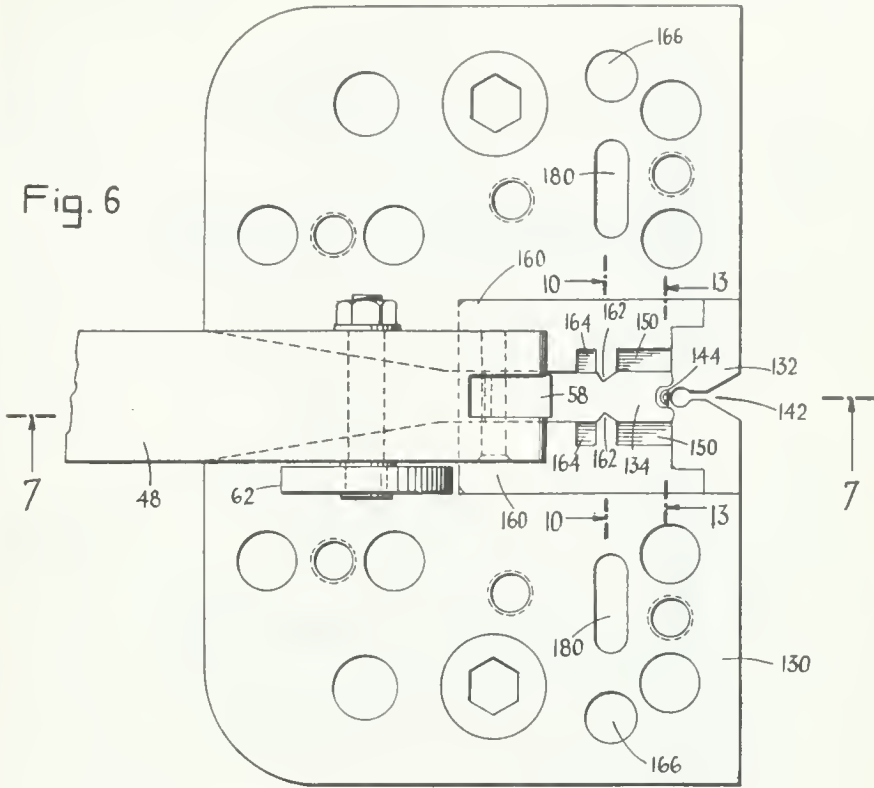
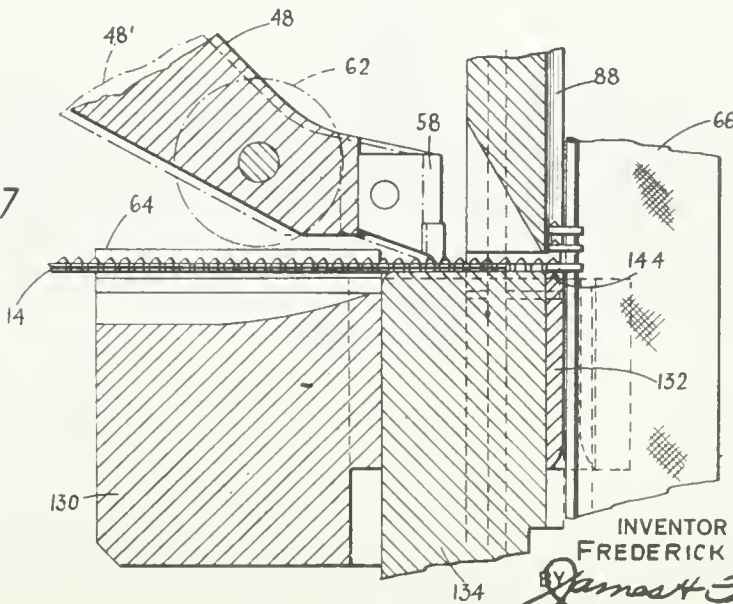


Fig. 7



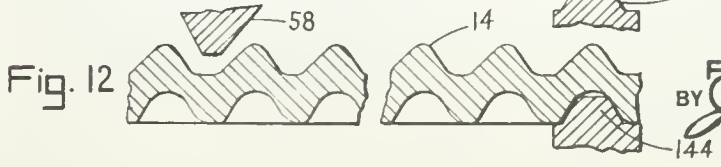
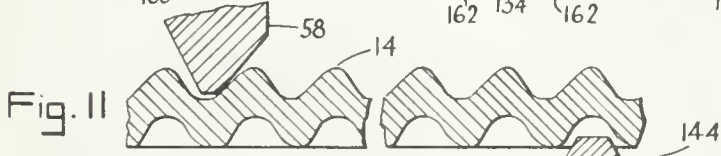
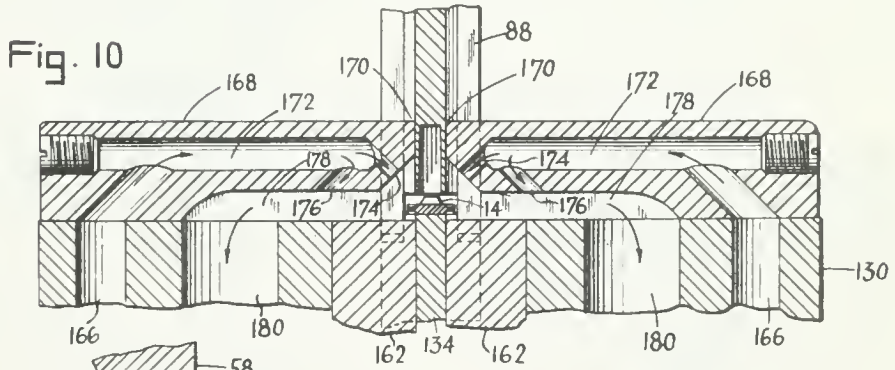
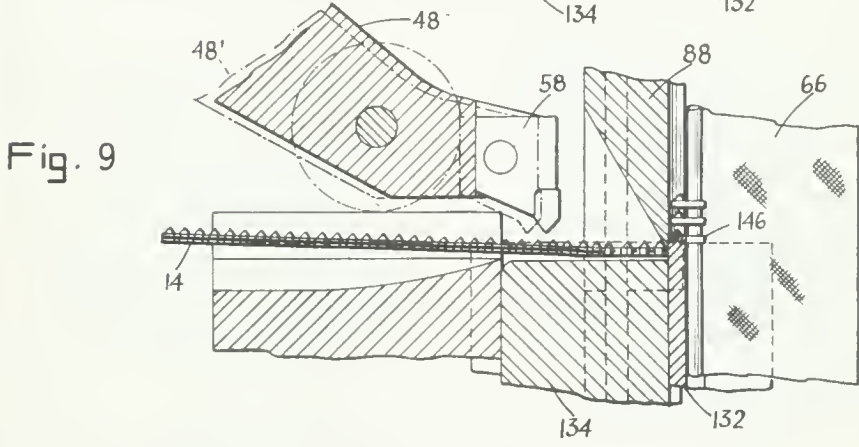
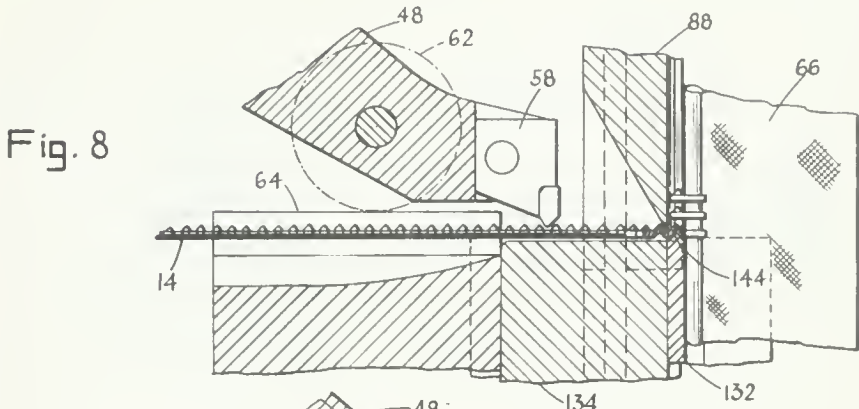
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APPARATUS FOR MAKING SLIDE FASTENERS

Filed Nov. 1, 1940

5 Sheets-Sheet 4

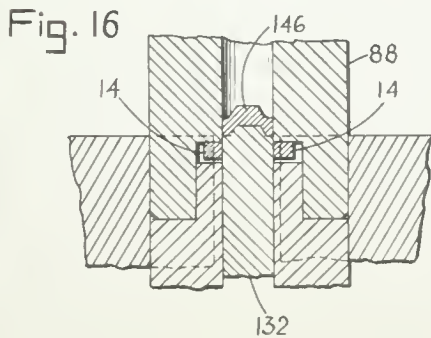
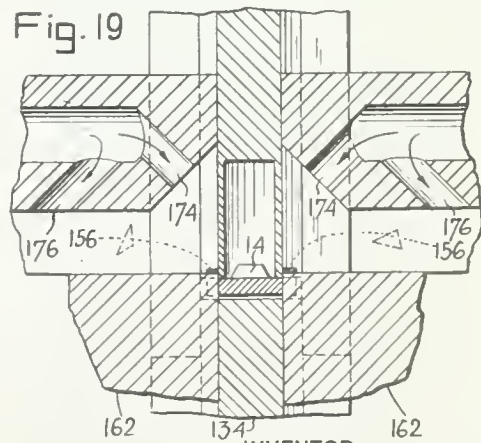
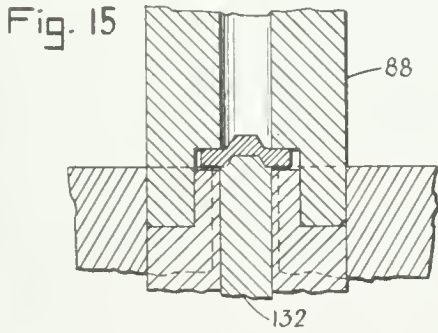
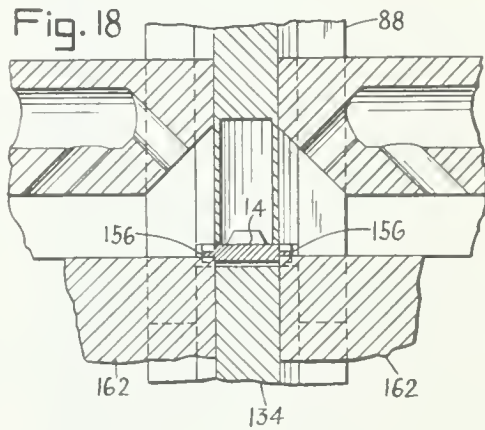
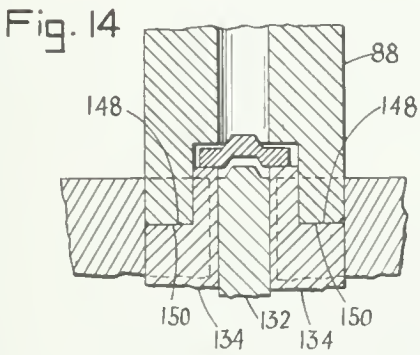
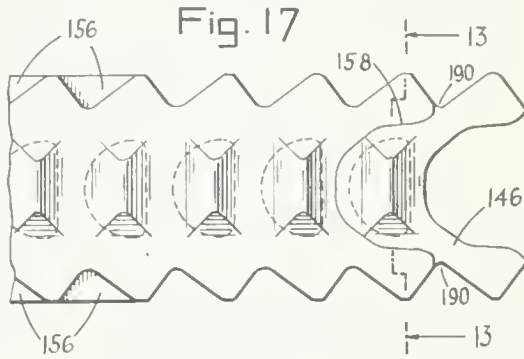
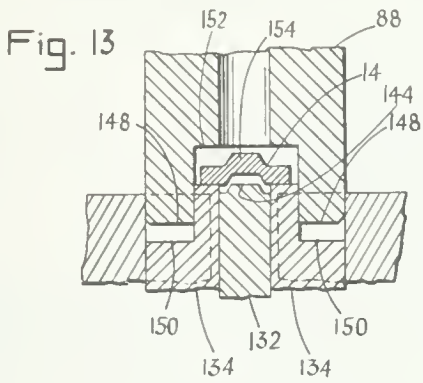


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APPARATUS FOR MAKING SLIDE FASTENERS

Filed Nov. 1, 1940

5 Sheets-Sheet 5



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UNITED STATES PATENT OFFICE

2,338,884

APPARATUS FOR MAKING SLIDE
FASTENERS

Frederick Ulrich, Bayonne, N. J., assignor to
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a corporation of New Jersey

Application November 1, 1940, Serial No. 363,804

10 Claims. (Cl. 153—1)

This invention relates to apparatus for making slide fasteners, and more particularly to a machine for severing embryo slide fastener elements and attaching the same to a tape.

The primary object of my invention is to provide apparatus of the aforesaid character, and more particularly improved apparatus for practicing the method disclosed in my co-pending applications Serial No. 179,299, filed December 11, 1937, and Serial No. 264,550, filed March 28, 1939, of which applications the present application is a continuation-in-part.

One more specific object of the present invention is to provide pilot means for exact location of the fastener element being severed, in order to improve the accuracy of said element.

Other objects center about the feed mechanism for feeding the fastener wire to the severing punch and are to redesign and lighten the feed arm for high-speed operation; and to so mount the dog that it may be moved upwardly when the spring pad of the die raises the wire, yet is stopped from moving downwardly during retraction of the dog, and is stopped before the element being severed comes into engagement with the aforesaid pilot, thereby freeing the fastener wire for proper seating or self-adjustment of the said element on the pilot.

In accordance with my invention as disclosed in the aforesaid application Serial No. 179,299, filed December 11, 1937, the fastener wire is provided with serrated edges in order that the finished elements may be formed with parallel sides and perpendicular ends for best cooperation with the slider. When making slide fastener wire by a rolling process, the wire will ordinarily come out with a thin residue or fin at the serrated edges. This fin may be removed by the punch and die mechanism of the attaching apparatus but, in such case, the use of an air blast is desirable in order to help insure removal of the tiny bits of scrap or fin cut from the wire. A further object of the present invention is to improve the air nozzle arrangement for discharging the scrap, and in accordance with my invention, while a part of the air stream may be directed into the punch and die, a larger portion of the air stream is diverted to flow outwardly into the scrap discharge path, thus helping draw the bits of scrap away from the punch and die.

To the accomplishment of the foregoing and such other objects as may hereinafter appear, my invention consists in the apparatus elements and their relation one to the other as herein-

after are more particularly described in the specification and sought to be defined in the claims. The specification is accompanied by drawings, in which:

5 Fig. 1 is a side elevation of apparatus embodying features of my invention;

Fig. 2 is a plan view of the head of the machine;

10 Fig. 3 is a side elevation of the head of the machine;

Fig. 4 is a plan view of a fragmentary portion of the machine, drawn to enlarged scale, with the ram and housing removed to expose the clamping jaws;

15 Fig. 5 is a partially sectioned elevation of the portion of the machine shown in Fig. 4;

Fig. 6 is a plan view of the die and feed dog without the ram housing and air blast nozzles and wire guides;

20 Fig. 7 is a section taken in elevation through the feed dog and punch, approximately in the plane of the line 7—7 of Fig. 6, and schematically illustrates the forward feed of the fastener wire;

25 Fig. 8 is a similar view showing the relation of the parts as the punch brings the endmost element onto the pilot;

Fig. 9 is a similar view showing the relation of the parts as the punch finishes its severing stroke and the feed dog is retracted;

30 Fig. 10 is a transverse section through the punch and air nozzles, taken approximately in the plane of the line 10—10 of Fig. 4;

35 Fig. 11 is a fragmentary section taken in elevation through the feed dog and pilot as the wire reaches the pilot;

Fig. 12 is a similar view but showing the relation of the parts when the wire is seated on the pilot;

40 Fig. 13 is a transverse section taken through the die at the pilot, approximately in the plane of the line 13—13 of Figs. 6 and 17, with the punch and spring pad in raised or feeding position;

45 Fig. 14 is a similar view showing the punch lowered until its heels meet the spring pad in such manner as to prevent binding of the wire as the wire approaches the pilot;

50 Fig. 15 is a similar view showing the punch lowered until it meets the wire preparatory to severing the same;

Fig. 16 is a similar view showing the punch in lowermost position;

55 Fig. 17 is a plan view of the end of the fastener wire drawn to enlarged scale;

Fig. 18 is a transverse elevational section similar to Fig. 10, but showing the punch lowered until the fin engages the die; and

Fig. 19 shows the relation of the parts at the end of the fin-cutting operation.

Referring to the drawings, and more particularly to Fig. 1, a reel 12 of slide fastener wire 14 is fed to attaching apparatus, the main drive and cam shaft of which is indicated at 16. Reel 12 may be unwound at intervals to provide a loop of slack between it and the attaching apparatus, as by means of an electric motor 18 controlled by a switch 20 moved by a feeler 22. The finished slide fastener stringer or so-called "chain" is fed over a feed wheel 24 through tube 26 into basket 28.

Referring now to Figs. 2 and 3, the main drive and cam shaft 16 is provided with a hand wheel, or/and fly wheel 30 and is driven by a suitable electric motor through belt 32 and pulley 34. The wire feed mechanism comprises a cylindrical cam 36 operating on a ball-bearing cam follower 38 mounted on the end 40 of a small compact feed arm 42 preferably made of Duralumin or equivalent light-weight metal. The Duralumin is preferably a heat treated material known commercially as 17 ST. The feed arm is pivoted at 44, and the movable end is provided with ears 46 pivotally carrying a feed dog 48 acted on by a compression spring 50. The cam follower is held in engagement with the cam by means of a compression spring 52, the tension of which may be adjusted by means of a screw 54 threadedly received in a stationary block 56.

Referring now to Figs. 4 and 5, the forward end of the feed dog carries an insert or tooth 58 having a suitably shaped hardened point 60. The feed dog 48 is arrested against downward movement at a desired point, for reasons later explained, and as here illustrated is provided with a suitable anti-friction roller 62 adapted to ride on the surface of part 64 of the die which part may, if desired, be provided with a hardened insert, not shown in the drawings. There are two parts 64 secured on top of the die, as is best shown in Fig. 4, and their combined function is to guide the wire 14. The parts 64 are omitted in Fig. 6.

The beaded edge tape on which the fastener elements are to be mounted is fed upwardly at the bottom of the machine as is indicated at 66 in Fig. 3. The tape is drawn upwardly through the die by means of a suitable knurled feed wheel 24 (Figs. 2 and 3), the tape being held against the wheel by means of a spring-pressed shoe 68. The feed wheel 24 is mounted at one end of a shaft 70 rotatably carried in a stationary bearing 72. The opposite end of shaft 70 carries a ratchet wheel 74. This is acted up by a tape feed pawl 76 carried at the lower end of an angle arm 78, the opposite end 80 of which is connected to the upper end of an eccentric rod 82, the split lower end of which is secured about an eccentric 84 mounted at one end of the drive shaft or cam shaft 16. The ratchet wheel 74 is further acted upon by a stationary holding pawl 86. It will be evident that the tape will be advanced intermittently or step by step as the cam shaft rotates.

The severing mechanism comprises a punch 88 (Fig. 5) carried in a ram 90 which is vertically reciprocable in a ram housing 92, the ram being normally urged upwardly by a compression spring 94, the upper end of which bears against a stud

(not shown) projecting from ram 90 over the upper end of the spring. Referring now to Figs. 2 and 3 the upper end of ram 90 is acted on by a generally U-shaped rocker arm 96, the branches of which are pivoted at 98 and carry cam follower rollers 100 at their lower ends. The rocker arm is preferably made of Duralumin or similar light-weight metal in order to facilitate high-speed operation of the machine. The throw of the rocker arm, like the throw of the various other reciprocating parts of this machine, is minimized with the same object in view. Cam rollers 100 are acted on by radial cams 102 mounted on cam shaft 16. It will be evident that rotation of shaft 16 will cause oscillation of the rocker arm and consequent reciprocation of the ram and punch.

The jaws of the fastener elements are clamped on the tape by suitable clamping jaws, and referring to Figs. 4 and 5 the clamping jaws 104 are mounted on levers 106 pivoted at 108 and carrying cam rollers 110 at their opposite ends. Rollers 110 operate between cylindrical cams 112 and 114, thus providing positive movement in both directions. In Fig. 4 the clamping jaws are shown in their open position.

Referring to Fig. 9, gap spacing or the omission of fastener elements between stringer lengths may be accomplished by holding the punch 88 down, thereby holding the fastener wire 14 down as shown, so that the tooth 58 of the feed dog 48 reciprocates idly above the wire without feeding the same. Referring now to Figs. 2 and 3, the machine is provided with a solenoid 116 having a core 118 which is moved upwardly when the solenoid is energized and thereby moves a suitable stop 120 into the path of a bridge 121 connecting the bifurcated ends of the rocker arm. This stop is so located as to move beneath the bridge when the cam wheels of the rocker arm have been raised by the cams, and the stop thus serves to hold the punch in depressed position. This interrupts the feed of elements to the tape and produces the desired gap or spacing between fastener lengths. After a desired interval the solenoid is deenergized, whereupon the reciprocation of the punch and the feed of the wire are resumed.

The time and the length of the feed interruptions may be determined by a suitable counter 122 (Fig. 2) which includes a changeable ratchet wheel 124 acted on by a feed dog oscillated by link 126, the other end of which link is connected to a small crank pin 128 (Fig. 3) on the end of the cam shaft. The counter is provided with suitable contact mechanism controlling the electrical circuit of solenoid 116. The counter may, for example, be of the type disclosed in the Wintritz and Ulrich Patent No. 2,167,259, filed June 17, 1938.

Referring now to Figs. 6 and 7, the die holder 130 is fitted with a stationary die 132 and a vertically reciprocable spring pad 134. The spring pad 134 is elevated by a compression spring 136 (Fig. 5) disposed therebeneath, the said spring operating on a pusher 138 bearing against the pad 134. A collar or enlargement 140 on pusher 138 limits the upward movement of the spring pad to a desired amount.

Reverting to Figs. 6 and 7, the stationary die 132 is provided with a suitable guide slot 142 for the tape 66. It is further provided on its top surface with a pilot 144. Fig. 7 shows the parts in feed position, the punch 88 being raised to clear the projections on top of the fastener wire

14 and the spring pad 134 rising to its uppermost position, which is somewhat higher than the top of stationary die 132 and enough to cause the wire 14 to clear the top of the pilot 144, so that the pilot will not obstruct movement of the wire toward the tape 65. It will also be noted that with the wire in raised position, it is engaged by the feed tooth of dog 48 and, in fact, the dog is raised slightly so that wheel 62 leaves the stop surface 64. The wire is fed toward the right by the amount of the pitch between elements, and this is indicated by the change from the broken line position 48' to the solid line position 48 of the feed dog.

Fig. 8 represents a later stage in the operation of the machine with the punch 88 lowered until its heels engage and lower the spring pad 134. The cutting surface of the punch has engaged and lowered the wire 14 until the endmost element is seated and properly located by the pilot 144. At this time the anti-friction wheel 62 has already reached its stop surface 64, thereby arresting the dog tooth 58 from further downward movement. There is a clearance between the feed tooth and the wire, this being desirable to insure free movement of the wire under control of the pilot 144 as the pilot comes into control.

This point may be clarified by reference to Figs. 11 and 12 in which the parts are drawn to enlarged scale. In Fig. 11 the wire 14 is still under the control of feed tooth 58, but has been lowered far enough to begin to come into the control of pilot 144. Approximately at the point indicated by Fig. 11, however, further downward movement of the feed tooth is prevented, so that by the time the wire 14 is seated on pilot 144 there is a clearance between the wire and the feed tooth 58. Thus the wire can properly seat itself on pilot 144 even though it may have been overfed by the feed dog, thus necessitating a slight backward movement of the wire under influence of the pilot.

In Fig. 9 the punch 88 has descended to lowermost position and has shared the wire from the endmost element 146, the latter resting on and being supported by the stationary die 132. At this time the wire is wholly out of the path of the feed tooth and there is accordingly no obstruction to retraction of the feed dog from the solid line position 48 to the broken line position 48', preparatory to the next feed movement. The cycle of operation is completed by referring back to Fig. 7 in which punch 88 has been raised, thus permitting the pad 134 to raise the wire 14, so that it engages the feed tooth and clears the pilot. Movement of the feed dog from the broken line position 48' to the solid line position 48 moves the wire to bring the jaws at the end of the wire astride the beaded edge of tape 66.

The foregoing cycle of operation may also be described with reference to Figs. 13, 14, 15, and 16 which are taken approximately in the plane of the line 13—13 of Figs. 6 and 17. In Fig. 13 the punch 88 is in elevated position, its heels 148 being located above the mating parts 150 of spring pad 134. The spring pad is in raised position, thus causing the wire 14 to clear the pilot 144 of stationary die 132. The cutting surface 152 of punch 88 is disposed well above the projection 154 on wire 14.

In Fig. 14 the punch 88 has descended far enough to cause the heels 148 to engage the surfaces 150 of the spring pad 134. It will be noted that the heels of the punch are long enough to provide a clearance around the wire, this clear-

ance being shown above the wire in Fig. 14 and below the wire in Fig. 15 but, in any case, guarding against binding of the wire between the punch on top of the wire and the spring pad beneath the wire, for this would inhibit proper self-adjustment and location of the wire on the pilot.

In Fig. 15 the punch 88 has descended far enough to bring the wire onto the stationary die 132. In Fig. 15 the punch is about to begin the shearing or severing operation. At this time the wire is bound between the punch and die but, of course, has already piloted itself on pilot 144. Fig. 15 corresponds substantially to Fig. 8, just as Fig. 13 corresponds to Fig. 7.

In Fig. 16 the punch 88 has moved to lowermost position and has sheared the wire 14 from the endmost element 146 resting on the die 132. This figure corresponds to the showing in Fig. 9.

The apparatus as so far described is adapted to operate on a wire having serrated edges and no fin. In practice, however, the wire is preferably formed by a rolling operation which leaves a thin fin of metal in the serrations, this fin being indicated at 156 in Fig. 17. The punch and die are accordingly further arranged to cut away the fin, thus leaving the endmost portion of the wire in serrated condition, preparatory to severance of the endmost element 146 on the shear line 158.

Referring to Fig. 6 the die holder 130 carries not only the stationary die portion 132 previously referred to, but two additional stationary die portions 160, these including the pointed parts 162 located between the punch heel receiving surfaces 160 and 164 of the spring pad 134. Thus the punch is provided with four heels, two being the heels 148 previously referred to which bear against the spring pad at 150, and the other two bearing against the spring pad at 164. The punch is cut away or channeled at its sides to fit around the stationary die portions 162.

Figs. 10, 18, and 19 are taken approximately in the plane of the line 10—10 of Fig. 6. Referring to Fig. 10, the punch 88 is shown in raised position, it clearing the wire 14. The latter rests on spring pad 134 which at this point is narrow, it being cut away to slide between the stationary die portions 162. It will be noted that the fin on wire 14 overlies the stationary die portions 162.

Referring now to Fig. 18 the punch 88 has descended and its heels have lowered the spring pad 134, so that there is clearance beneath the wire 14. The wire has been carried down until the fins 166 rest on stationary die portions 162. This corresponds to the beginning of the fin-cutting operation. In Fig. 19 the punch has descended to lowermost position, thus shearing the wire 14 from the fins 166, the latter being restrained against downward movement by the stationary die portions 162.

This punch arrangement for cutting away the fin may also be used if necessary to cut through the full thickness of the wire or, in other words, to form the notches or serrations in the side edges of the wire. Thus the wire fed to the machine may have smooth edges with only the projections and recesses preformed therein. However, it is preferable to supply a wire with serrated edges as here illustrated.

Reverting to Figs. 6 and 10, compressed air is supplied through openings 166 in die holder 130. The air is thus led to nozzles 168 secured on top of the die with their ends 170 adjacent the punch 88 at the fin-cutting station. In Fig. 6 the nozzles have been removed, but they are shown at 168 in

Fig. 4. The compressed air flows through passages 172 to relatively small discharge openings 174 which are directed against the sides of the punch and against the scrap or fin. A larger component of the compressed air is directed outwardly through openings 176 which lead into the scrap discharge channels 178. This helps carry the scrap along. It also tends to reduce pressure in channels 178, which is effective to draw the air from nozzles 174 outwardly, and with it the tiny triangular bits of scrap outwardly, as is most clearly shown in Fig. 19.

Reverting to Fig. 10, the passages 178 communicate with holes 180 in the die block 130. These holes 180 for the discharge of scrap are elliptical or elongated, as is clearly shown in Fig. 6, and is also shown in Fig. 4. In the latter figure the compressed air supply pipes 182 are shown, these pipes leading from a suitable source to the openings 166.

From consideration of Fig. 6, it will be seen that there are no loose or severed elements between the wire and the endmost element which is being attached to the tape. This will also be clear from inspection of Fig. 17 in which the endmost element 146 is integral with the wire when the wire is being fed to the tape, and is severed from the wire only after being moved against the tape. Thus prior to the severing operation there are no loose elements, and after the severing operation there is only a single severed element, but this is astride the tape and is under the control of the clamping jaws. The latter preferably operate after the severing operation in order to free jaws from the metal of the next succeeding element before attempting to close the jaws. Because of the absence of loose elements there is no need for so shaping the elements as to establish an undercut or interlocking relation therebetween, and instead the outline 158 of the head of the element may take the simple divergent form shown.

If the notches are rounded somewhat, instead of being provided with a sharp point, and if the cutting punch follows the outer wall of the jaws, then small points of metal will be left on the outer ends of the jaws at the places marked 190. However, I consider it slightly preferable to round or dull, rather than point the end of the jaw, and the punch therefore turns outwardly, thus leaving slight projections of metal at the points 180 on the outside of the jaws of the element. This projection of metal is so slight in size that it is readily flattened by the action of the clamping jaws when the elements are being clamped on the tape.

It is believed that the construction and operation of my improved apparatus for severing and attaching fastener elements, as well as the many advantages thereof will be apparent from the foregoing detailed description thereof. Slide fastener wire is fed into the machine, said wire having projections on its upper side and recesses on its lower side and having serrated edges with a residue of fin therealong. The pitch or distance between the projections and recesses is only a small fraction of the length of the elements. The elements being nested together in a substantially scrapless manner, the only scrap being the fin at the serrated edges. The wire is intermittently fed toward the tape by the feed dog. The tape is intermittently moved by the tape feed wheel. The punch bears against the wire immediately around the endmost element, the latter resting on a stationary die surface, so that the punch

shears the wire downwardly away from the endmost element. Immediately thereafter the clamping jaws close the jaws of the element on the tape, and the wire feed dog moves back, the wire being held below the dog by the punch.

The pilot on the die insures accurate location of the element relative to the die as it is being cut, and the location is not dependent on the extent of feed by the feed dog. The wire is so operated upon that it is free to self-adjustably seat itself accurately on the pilot, there being no restraint by either punch or the feed dog at the instant of piloting. Triangular bits of scrap may be cut from the side edges of the wire by the same punch and are cleared away from the punch by two divergent compressed air streams. The reciprocating parts of the machine are kept small in stroke and light in weight, thus making possible operation at very high speed.

It will be apparent that while I have shown and described my invention in a preferred form, many changes and modifications may be made without departing from the spirit of the invention as sought to be defined in the following claims.

I claim:

1. Apparatus for the manufacture of slide fasteners, said apparatus comprising a stationary die portion having an external configuration conforming to the shape of the head portion of an element with spread jaws, a pilot projecting upwardly on said die portion and adapted to be received in the recess of an element, a spring pad normally elevated to a position higher than the pilot, a punch over said spring pad having a part mating with the stationary die portion for severing an integral strip of embryo elements from the element overlying said die portion, and heels on said punch for bearing against said spring pad, said heels being of such length as to prevent squeezing of the strip between the punch and the pad, whereby said strip is free for self-adjustable seating on the pilot until the cutting action of the punch begins.

2. Apparatus for the manufacture of slide fasteners, said apparatus comprising a stationary die portion having an external configuration conforming to the shape of the head portion of an element with spread jaws, a pilot projecting upwardly on said die portion and adapted to be received in the recess of an element, a spring pad normally elevated to a position higher than the pilot, a punch over said spring pad having a part mating with the stationary die portion for severing an integral strip of embryo elements from the element overlying said die portion, a feed dog for feeding the strip, and means limiting the downward movement of the feed dog to an intermediate elevation such that said dog is at least partially disengaged from said strip when the punch has forced the strip onto the pilot, said feed dog being pivotally mounted to afford upward movement above said intermediate elevation when the spring pad raises the strip for forward feed above the pilot.

3. Apparatus for the manufacture of slide fasteners, said apparatus comprising a stationary die portion having an external configuration conforming to the shape of the head portion of an element with spread jaws, and having an internal configuration conforming to a beaded tape on which the element is to be attached, a pilot projecting upwardly on said die portion and adapted to be received in the recess of an end element, a spring pad normally elevated to a position high-

er than the pilot, a punch over said spring pad having a part mating with the stationary die portion for severing an integral strip of embryo elements from an end element overlying said die portion, clamping jaws for clamping the severed element on the beaded edge of the tape, a feed dog for feeding the strip, and means limiting the downward movement of the feed dog to an intermediate elevation such that said dog is at least partially disengaged from said strip when the punch has forced the strip onto the pilot, said feed dog being pivotally mounted to afford upward movement above said intermediate elevation when the spring pad raises the strip for forward feed above the pilot.

4. Apparatus for the manufacture of slide fasteners, said apparatus comprising a stationary die portion having an external configuration conforming to the shape of the head portion of an element with spread jaws, a pilot projecting upwardly on said die portion and adapted to be received in the recess of an element, a spring pad normally elevated to a position higher than the pilot, a punch over said spring pad having a part mating with the stationary die for severing an integral strip of embryo elements from the element overlying said die portion, heels on said punch for bearing against said spring pad and of such length as to prevent squeezing of the strip between the punch and the pad, whereby said strip is free for self-adjustable seating on the pilot until the cutting action of the punch begins, a feed dog for feeding the strip, and means limiting the downward movement of the feed dog to an intermediate elevation such that said dog is at least partially disengaged from said strip when the punch has forced the strip onto the pilot, said feed dog being pivotally mounted to afford upward movement above said intermediate elevation when the spring pad raises the strip for forward feed above the pilot.

5. Apparatus for the manufacture of slide fasteners, said apparatus comprising means to intermittently feed a wire having a series of interlocking means, a single punch movable transversely of the wire to sever the wire from a piece of the wire projecting beyond the punch, the outline of the punch being such as to provide a notching portion and a severing portion so that the projecting piece constitutes a fastener element having a head with spread jaws projecting forwardly therefrom, the head being of such dimension as to fill the space between the jaws, a spring pad beneath the punch to restore the wire to the element previously severed therefrom, the notching portion cooperating with stationary die surfaces beneath the wire at opposite sides of the spring pad for removing small triangular-shaped pieces of scrap metal, air blast means for helping remove the small triangular pieces of scrap, said means including an air inlet, an air and scrap outlet, a first nozzle extending from said inlet to a point above the pieces of scrap at the opposite sides of the punch for blowing the scrap toward the outlet, and a second nozzle extending from said inlet outwardly in the direction of scrap discharge to said outlet.

6. Apparatus for the manufacture of slide fasteners, said apparatus comprising means to intermittently feed a wire having serrated side edges, the serrations of which carry a comparatively thin fin, said wire also having a series of interlocking means, a single punch movable transversely of the wire to sever the wire from a

piece of the wire projecting beyond the punch, the outline of the punch being such as to provide a notching portion and a severing portion so that the projecting piece constitutes a fastener element having a head with spread jaws projecting forwardly therefrom, the head being of such dimension as to fill the space between the jaws, a spring pad beneath the punch to restore the wire to the element previously severed therefrom, the notching portion cooperating with stationary die surfaces beneath the wire at opposite sides of the spring pad for removing the triangular-shaped fins or scrap metal, air blast means for helping remove the small triangular pieces of fin or scrap, said means including an air blast, an air and scrap outlet, a first nozzle extending from said inlet to a point above the pieces of scrap at the opposite sides of the punch for blowing the scrap toward the outlet, and a second nozzle extending from said inlet outwardly in the direction of scrap discharge to said outlet.

7. In apparatus for the manufacture of slide fasteners by severing the same from a strip, with the accompanying production of small pieces of scrap or waste at the severing station, an air flow means using compressed air to help insure discharge of the scrap, said means including a compressed air inlet, an air and scrap outlet extending away from the severing station, and a nozzle extending from said inlet outwardly in the direction of scrap discharge and joining said outlet at a point spaced from said severing station, said nozzle blowing air outwardly through the outlet and thereby tending to move the scrap through the outlet.

8. In apparatus including a punch and die for the manufacture of slide fasteners by severing the same from a strip, with the accompanying production of small pieces of scrap or waste, an air flow means using compressed air to help insure discharge of the scrap, said means including a compressed air inlet, an air and scrap outlet extending away from the punch and die, a first nozzle extending from said inlet to a point immediately adjacent the punch and die for agitating and blowing the scrap away from the die, and a second nozzle extending from said inlet outwardly in the direction of scrap discharge to said outlet for blowing air outwardly through the outlet and thereby tending to draw the air from the first nozzle and with it the scrap into the outlet.

9. Apparatus for the manufacture of slide fasteners, said apparatus comprising means to intermittently feed a wire, a single punch and die mechanism to sever the wire, the outline of the punch being such as to provide a notching portion and a severing portion such that the severed piece constitutes a fastener element having a head with spread jaws projecting forwardly therefrom, the head being of such dimension as to fill the space between the jaws, the notching portion acting to remove a triangular-shaped piece of scrap metal at the outside of the embryo jaws, and compressed air blast means for helping transfer the small triangular piece of scrap to an appropriate receptacle, said means including a compressed air inlet, an air and scrap outlet extending away from the punch and die, a first nozzle extending from said inlet to the punch and die for agitating and blowing the scrap away from the die, and a second nozzle extending from said inlet outwardly in the direction of scrap discharge to said outlet for blowing air outwardly through the outlet and thereby tending to draw

the air from the first nozzle and with it the scrap into the outlet.

10. Apparatus for the manufacture of shaped units from a strip, said apparatus comprising means to intermittently feed the strip, a punch and die mechanism to sever the strip into units of desired outline with the formation of small pieces of scrap, and compressed air nozzle means for helping remove the small pieces of scrap, said means comprising generally horizontally disposed members extending over the die to the sides of the punch and closely fitting the sides of the punch, a generally horizontal air inlet through each

member, an outlet beneath said inlet, a source of compressed air connected to each inlet, a nozzle at the inner end of each inlet directed inwardly and downwardly toward the cutting station, and a second nozzle passing downwardly through each member from the inlet to the outlet, said second nozzle extending diagonally outward to the outlet, whereby the first nozzle serves to agitate and blow the scrap away from the punch and die, while the second nozzle tends to blow the scrap outwardly.

FREDERICK ULRICH.

DEFENDANT'S EXHIBIT "BW"

G. E. Prentice Patent No. 2,116,712

Filed July 11, 1935

Patented May 10, 1938



May 10, 1938.

G. E. PRENTICE

2,116,712

METHOD OF MAKING FASTENER UNITS

Filed July 11, 1935

Fig. 1

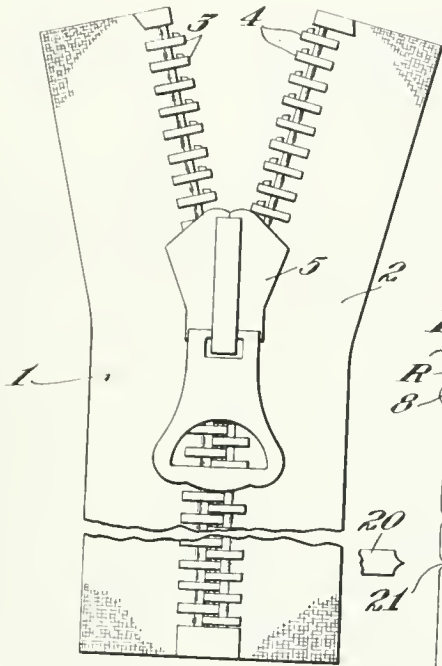


Fig. 2

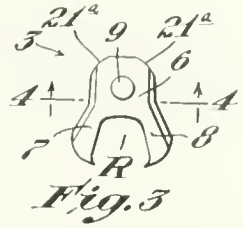
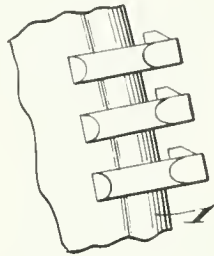


Fig. 3



Fig. 4

Fig. 8

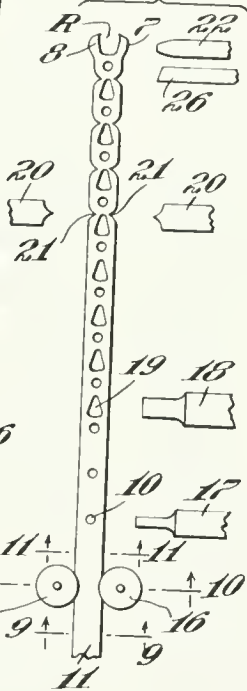


Fig. 12

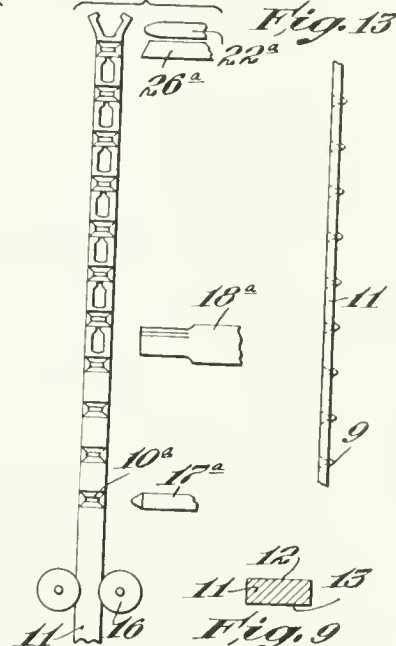


Fig. 13



Fig. 5

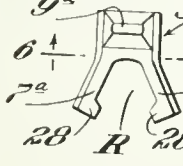


Fig. 6

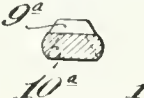


Fig. 7

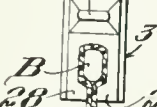


Fig. 14

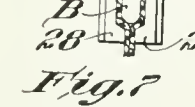


Fig. 15



Fig. 16

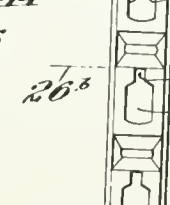


Fig. 9

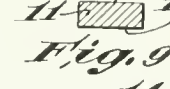


Fig. 10



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UNITED STATES PATENT OFFICE

2,116,712

METHOD OF MAKING FASTENER UNITS

George E. Prentice, Berlin, Conn.

Application July 11, 1935, Serial No. 30,888

6 Claims. (Cl. 29—148)

This invention pertains to separable fasteners of the kind in which opposed series of fastener units, attached respectively to the edges of flexible supports or stringers constituting the edges of a gap to be closed, are moved into gap-closing relation by means of a slider, and relates more particularly to an improved fastener unit and to a method of making such units. One common prior method of making such units has been to cut them from sheet material and the usual practice has been so to cut the unit that its legs or jaw portions are initially in divergent relation. This mode of procedure involves a very substantial waste of material, and as the corrosion-resistant metal, commonly employed in making such units, is quite expensive, this waste constitutes a large item in the cost of production.

In accordance with usual procedure, the incisions made in producing the unit are wholly within the boundary of the sheet metal from which the unit is cut, so that the entire periphery of the unit is a raw surface resulting from the action of the cutting dies. When, as is quite common in the art, the units are secured directly after cutting to the edge of the stringer, these raw surfaces of the metal, particularly if the dies have become dull, are rough and burred, and in the finished fastener the units are disagreeable to the touch and cause a harsh and noisy action of the slider.

One object of the present invention is to provide a novel method of procedure in preparing fastener units of the class described whereby waste of material is reduced to a minimum.

A further object is to provide a new method procedure which results in the production of an improved unit whose lateral edges at least are smooth and free from burrs when the units are originally formed, so that if directly attached to the stringer without any intermediate finishing operation, the resultant unit is smooth and agreeable to the touch and permits an easy and substantially noiseless movement of the actuating slider.

In the accompanying drawing I have illustrated certain desirable steps in the practice of an improved method of producing such units, as well as a desirable modification thereof, and have also illustrated the resulting improved fastener unit produced in accordance with the practice of my novel method.

Fig. 1 is a fragmentary front elevation of a slide actuated fastener of the type to which the present invention relates;

Fig. 2 is a fragmentary elevation of one of the

stringers or flexible supports of such a fastener, to large scale, showing improved units made in accordance with the present invention attached thereto;

Fig. 3 is a plan view of a single fastener unit made in accordance with one desirable embodiment of the present invention, the unit being shown as it appears prior to application to the stringer;

Fig. 4 is a section substantially on the line 4—4 of Fig. 3;

Fig. 5 is a view similar to Fig. 3 but illustrating a unit of slightly different shape;

Fig. 6 is a section on the line 6—6 of Fig. 5;

Fig. 7 is a plan view of the unit of Fig. 5 but shown as applied to a stringer tape, the latter being in transverse section;

Fig. 8 is a diagrammatic plan view illustrating certain steps in the improved method of making fastener units of the specific type illustrated in Fig. 3;

Fig. 9 is a transverse section substantially on the line 9—9 of Fig. 8;

Fig. 10 is a transverse section on the line 10—10 of Fig. 8;

Fig. 11 is a transverse section on the line 11—11 of Fig. 8;

Fig. 12 is a view similar to Fig. 8 but illustrating a modified procedure resulting in the production of fastener units such as specifically illustrated in Fig. 5;

Fig. 13 is an edge elevation of a metallic strip or ribbon, such as is illustrated in plan view in Figs. 8 and 12, respectively, showing the strip after the completion of the cupping operation;

Fig. 14 is a transverse section, to larger scale, through the endmost section of the strip or ribbon of metal from which the units are prepared, showing the operation of the punch which exerts spreading pressure to cause the legs of the unit to diverge;

Fig. 15 is a fragmentary plan view, to large scale, showing the advancing end portion of a strip or ribbon and illustrating the operation of the spreading punch and also of the cutting off tool; and

Fig. 16 is a fragmentary plan view showing the forward advancing end portion of a strip or ribbon, such as illustrated in Fig. 12, and indicating the endmost unit in readiness to be severed and to have its legs spread apart divergently.

Referring to the drawing, the numerals 1 and 2 designate flexible stringers or supports of usual type to which the series of fastener units 3 and 4 are attached, the units of the opposed series being

moved into and out of engaging relation by means of the slider 5.

As illustrated in Fig. 3, the fastener unit, in accordance with the present invention and as it appears before application to the stringer, comprises a head portion 6 and divergent leg portions 7 and 8 separated by a recess R, the leg portions 7 and 8 constituting anchoring means for securing the unit to the flexible stringer. The head portion of the unit is provided on one of its flat faces with a projecting pin 9 and is provided at its opposite face with a complementary socket or recess 10 coaxial with the pin 9.

In preparing this unit in accordance with the present invention, the first step is to provide a strip or ribbon 11 of metal of the desired character for use in forming the unit, such strip being of substantially the same width as the width of the head portion 6 of the desired unit and ordinarily having substantially flat and parallel upper and lower faces 12 and 13, respectively (Fig. 9). As illustrated in Fig. 9, this metal ribbon or strip is of substantially rectangular cross section. However, if a strip, such as shown in Fig. 9, be employed, the edges of the strip are rounded off (as shown at 15 in Fig. 11) at an early stage in the operation of making the units, preferably, as illustrated in Fig. 10, by passing the strip or ribbon between a pair of rollers or wheels 16 adapted either by compression or by abrasion to round the edges of the strip and to give them a smoothly finished appearance. Preferably the edges are rounded by pressure or the equivalent of a drawing operation so as to make these edges dense and hard and capable of withstanding considerable use without becoming rough or becoming worn by the action of the slider.

When the operation of making the units as herein described is to be carried out as a continuous process, the strip or ribbon 11 may be advanced endwise intermittently by steps each substantially equal to the length of a complete unit, first passing between the edge shaping rolls 16 and then reaching the position of operation of the cupping die 17. This die is actuated by any appropriate mechanism (not shown) and operates at regular intervals to form the recesses or sockets 10 in the upper face of the ribbon or blank,—at the same time forcing the metal at the under side of the ribbon into an outwardly projecting boss constituting the pin 9, it being understood that a suitable die at the lower side of the ribbon cooperates with the punch 17 to shape the pin 9 and give it the accurate contour necessary for the intended purpose.

The ribbon is then again advanced, and after the performance of several of the cupping operations the ribbon reaches the field of activity of the piercing die 18. This die is so arranged as to form an aperture or perforation 19 in the space between consecutive sockets 10. Preferably the aperture 19 is elongate in the direction of the length of the ribbon, and preferably it is wider at one end than at the other, the wider end being adjacent to the pin which follows it.

The ribbon now continues to advance, and after a suitable interval reaches the field of operation of a pair of oppositely moving forming tools 20, which engage the ribbon at its opposite rounded edges and indent these edges so as to form the opposed indentations or recesses 21. The forming tools 20 are of such shape that they press the metal inwardly, causing it to flow smoothly so that the walls of the indentations 21 consist of substantially unbroken portions of

the original rounded edges of the ribbon. The ribbon continues to advance intermittently until the endmost of the apertures 19 is brought into the field of action of the spreading punch 22. With the understanding that this endmost aperture 19 extends to the end of the ribbon, so that the small end of the aperture is open at the end of the ribbon, the descent of the spreading punch 22 causes pressure to be exerted against the inner walls 23 and 24 (Fig. 14) of the endmost aperture, thus spreading apart the metal forming the walls of the aperture resulting in the formation of the divergent legs 7 and 8 (Fig. 3) of the unit.

As the spreading punch 22 begins to press against the side walls of the endmost aperture 19, a cutting-off tool 26 engages the ribbon on a transverse line joining the inner ends of that pair of recesses 21 which is nearest to the end of the ribbon, thus cutting off the completed endmost unit which has the appearance shown in Fig. 3. It may be noted that this transverse cut intersects the end of the next aperture 19 so that the incision made by the tool 26 frees the metal at opposite sides of the aperture 19 in readiness to be spread apart at the next operation of the spreading die 22. The endmost unit thus formed is stripped off from the spreading die 22 by means of any appropriate stripping device S, such as indicated diagrammatically at S in Fig. 14. The extreme ends of the leg portions 7 and 8 of the completed unit are sharp and prong-like, well adapted to grip the material of the stringer when the unit is applied thereto.

It may be understood that the several dies and forming tools are all operated at substantially the same time and at proper intervals so that, for example, while the cupping tool is forming the recesses 10, the piercing die 18 is forming the apertures 19, the forming tools 20 are producing the indentations 21, the spreading die 22 is acting to spread the legs of the endmost unit, while the cutting tool 26 operates at the proper time to cut off the completed endmost unit as the legs are being spread.

It will be noted that the side edges of the head 6 of the unit, as well as the outer edges of the legs 7 and 8 and parts 21^a (Fig. 3) of the end surface of the head 6 are smoothly rounded and are in fact portions of the original rounded edges 15 of the ribbon. Thus the major portion of the exposed edge of the unit, after application to the stringer, is finished and smooth so that even though the units be attached directly to the stringer as they are formed, the units present smooth surfaces for engagement by the slider so that the action of the latter is much easier and less noisy than when cut units of usual type are attached directly to the stringer without preliminary finishing.

In the arrangement illustrated in Figs. 5, 6, 7 and 12, the strip or ribbon 11, after having its edges rounded, is first caused to advance into the field of activity of a cupping punch 17^a, which is so shaped as to form a transversely elongate recess 10^a of inwardly tapering form, and at the same time to cause the metal at the opposite side of the ribbon to project and form a pin 9^a which is elongate transversely of the strip or ribbon, and which is preferably of substantially truncated, pyramidal form.

After the formation of the recess and corresponding pin, the ribbon is advanced intermittently, and after several forward steps comes into the field of activity of the piercing die 18^a. This

die forms an elongate aperture 19^a (Fig. 16) of more or less rectangular contour but having at its forward end a narrow recess or bay 19^b. After the completion of the piercing operation, the ribbon further advances, but in this instance is not indented at the sides, the edge of the ribbon being left straight and continuous.

Assuming that a perforation or aperture 19^a has been formed at the advancing end of the ribbon and that the extension or bay 19^b of this aperture is open at the end of the ribbon, the advance of the ribbon brings this aperture into the field of operation of the spreading punch 22^a, which now enters the aperture 19^a, and by exerting pressure against the side walls of the aperture spreads such walls apart, causing them to assume the divergent relation shown at 7^a, 8^a, respectively, in Fig. 5. As the punch 22^a comes into action, the cutting-off tool 26^a severs the ribbon along the line 26^b (Fig. 16) so as to separate the unit from the remainder of the ribbon. By reference to Fig. 5, it will be noted that the portions of the metal at opposite sides of the narrow bay or recess 19^b now constitute prongs or anchoring elements 28 (Fig. 5) which, when the unit is compressed on the stringer, as shown in Fig. 7, press into the substance of the stringer and thus anchor the latter firmly with the beaded edge B of the stringer disposed in the bottom of the recess R. It may be noted that since the aperture 19 or 19^a is a freely open aperture, such as results from punching out and removing a portion of the metal, sufficient space is thus provided for the reception of the beaded edge of the stringer when the unit is secured to such edge, in this way permitting the divergent leg portions of the unit to be so compressed that in the finished fastener the attached portion of the unit is no wider in a front-to-rear direction than is the head of the unit (Fig. 7). This insures smooth operation of the slider and permits the slider to be made of minimum dimensions in front-to-rear thickness.

While I have herein illustrated desirable embodiments of the invention, it is to be understood that the invention is of broader application, and that while certain specific sequences of steps in the method have been described, the same steps may be carried out in other sequence without departing from the invention as set forth in the appended claims.

I claim:

1. Method of making fastener units, having smoothly rounded lateral edges, from ribbon-like material, without waste, said method comprising as steps preparing a metal ribbon having substantially flat upper and lower surfaces and rounded edges, successively cupping the ribbon, at points regularly spaced apart by distances substantially equal to the length of a completed unit, to produce sockets in one face and corresponding projecting pins on the other face of the ribbon, piercing the ribbon in the spaces between successive pins to provide elongate open apertures, projecting a spreading device into each such elongate aperture and, as the spreading device begins to act, cutting completely through the ribbon transversely at the end of the aperture nearest the pin, but without removing any substantial portion of the material of the ribbon, thereby to divide a completed unit from the ribbon and concomitantly to release the metal at opposite sides of the next aperture to permit it to be spread apart in the succeeding operation of the spreading device.

2. Method of making fastener units of the class described each having smoothly rounded lateral edges a head portion, and a pair of diverging attaching jaws, the head portion being provided with a projecting pin on one face and a corresponding socket in the opposite face, said method comprising as steps preparing a metal ribbon of a width substantially equaling the width of the head of the desired unit and of a thickness substantially equaling that of the body of the completed unit, the ribbon having parallel upper and lower faces providing the ribbon with smoothly rounded edges, successively cupping the ribbon, at points regularly spaced apart by distances substantially equal to the length of a completed unit, to produce a socket in one face and a corresponding projecting pin on the other face, piercing the ribbon to form an elongate open aperture spaced from the projecting pin and extending longitudinally of the ribbon, applying spreading pressure to the metal at opposite sides of the aperture and cutting completely through the ribbon by a transverse incision at that end of the aperture nearest to the pin, but without waste of any substantial portion of the material of the ribbon, thereby without waste to divide a completed unit from the ribbon and concomitantly to release the metal at opposite sides of the aperture so that it may be spread apart at the next actuation of the spreading means.

3. Method of making fastener units of the class described each having smoothly rounded lateral edges, a head portion, and a pair of diverging attaching jaws, the head portion being provided with a projecting pin on one face and a corresponding socket in the opposite face, said method comprising as steps preparing a metal ribbon of a width substantially equaling the width of the head of the desired unit and of a thickness substantially equaling that of the body of the completed unit and having parallel upper and lower faces and smoothly rounded edges, successively cupping the ribbon, at points regularly spaced apart by distances substantially equal to the length of a completed unit, to form a transversely elongate socket in one face and a transversely elongate projecting pin member on the opposite face, piercing the ribbon to form an elongate substantially rectangular aperture extending longitudinally of the ribbon, said aperture having a narrow extension at that end most remote from the pin, cutting completely through the ribbon by a transverse incision intersecting the narrow extension of the aperture in such a way as without waste of any substantial portion of the ribbon to divide a unit from the ribbon while concomitantly freeing the metal at opposite sides of the aperture so that the opposite side walls of the aperture may be caused to diverge, and applying spreading pressure to the inner walls of the aperture.

4. Method of making fastener units of the class described each having smoothly rounded lateral edges, a head portion, and a pair of diverging attaching jaws, the head portion being provided with a projecting pin on one face and a corresponding socket in the opposite face, said method comprising as steps preparing a metal ribbon of a width substantially equaling the width of the head of the desired unit and of a thickness substantially equaling that of the body of the completed unit and having parallel upper and lower faces and smoothly rounded edges, cupping the ribbon, at points regularly spaced apart by distances substantially equaling the

length of a completed unit, to produce the socket in one face and the corresponding projecting pin on the other face, piercing the ribbon to form an elongate aperture spaced from the projecting pin and extending longitudinally of the ribbon, indenting the round edges of the ribbon at opposite sides and at points substantially opposite to that end of the aperture most remote from the pin, severing the ribbon, without removing any substantial portion of the material as waste, by a transverse incision at that end of the aperture most remote from the pin in such a way as without waste to divide a unit from the ribbon and concomitantly to free the metal at opposite sides of the aperture so that it may be spread apart divergently, and applying pressure to the interior walls of the aperture to spread said walls apart.

5. Method of making fastener units of the class described each having smoothly rounded lateral edges, a head portion, and a pair of divergent attaching jaws, the head portion being provided with a projecting pin on one side and a corresponding socket in the opposite side, said method comprising as steps providing a metal ribbon of a width substantially equaling the width of the head of the desired unit and of a thickness substantially equaling that of the body of the completed unit, advancing said ribbon past finishing means operative smoothly to round the edges of the ribbon, successively cupping the advancing ribbon at points regularly spaced apart by distances substantially equal to the length of a completed unit, to produce spaced sockets in one face of the ribbon and corresponding projecting pins on the other face of the ribbon, piercing the advancing ribbon in each space between adjacent pins to produce elongate open apertures extending longitudinally of the ribbon, severing the ribbon by successive incisions, each cutting com-

pletely through the ribbon, which intersect the forward ends of the apertures in such a manner as without waste to divide a unit from the ribbon and concomitantly to free the metal at opposite sides of each aperture and thereby permit the metal at opposite sides of the aperture to be divergently spread, and applying spreading pressure to the opposite inner walls of said apertures in succession.

6. Method of making fastener units of the class described each having smoothly rounded lateral edges, a head portion, and a pair of divergent attaching jaws, the head portion being provided with a projecting pin on one side and a corresponding socket in the opposite side, said method comprising as steps preparing a metal ribbon of a width substantially equal to the width of the head portion of the desired unit and of a thickness substantially equaling the thickness of the body portion of a completed unit, intermittently advancing said ribbon endwise by steps each substantially equal to the length of a completed unit past a series of operating stations spaced apart distances which are substantially integral multiples of the length of a completed unit, cupping the ribbon at the first of said stations thereby to produce a socket on one face and a corresponding projecting pin on the other face, piercing the ribbon at a later station to form an open aperture elongate in the direction of the length of the ribbon, cutting the ribbon completely through at that end of the aperture most remote from the pin, in such a way as without waste of material to divide a unit from the ribbon and concomitantly to free the material at opposite sides of the aperture, and at another station exerting spreading pressure against the walls of the aperture.

GEORGE E. PRENTICE.

DEFENDANT'S EXHIBIT "BX"
(For Identification)

J. F. Thayer Patent No. 322,997

Filed June 8, 1885

Patented July 28, 1885



(No Model.)

J. F. THAYER.

METHOD OF CUTTING STAPLES.

No. 322,997.

Patented July 28, 1885.

Fig. 1.

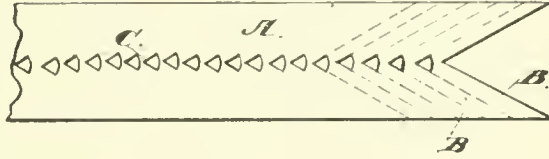


Fig. 2.

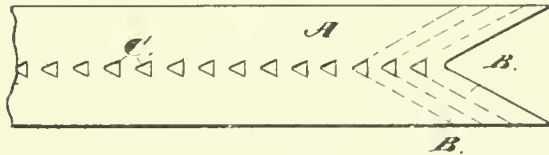
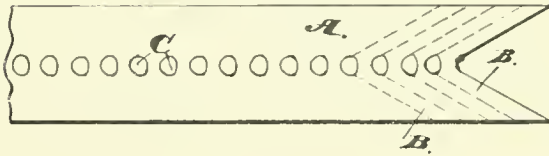


Fig. 3.



Witnesses:
Geo. H. Prentice
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Inventor:
James F. Thayer



UNITED STATES PATENT OFFICE.

JAMES F. THAYER, OF PROVIDENCE, RHODE ISLAND.

METHOD OF CUTTING STAPLES.

SPECIFICATION forming part of Letters Patent No. 322,997, dated July 28, 1885.

Application filed June 8, 1885. (No model.)

To all whom it may concern:

Be it known that I, JAMES F. THAYER, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Methods of Cutting Staples; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification

My invention relates to a method of cutting staples for fastening buttons from sheet-metal blanks of the width of the finished staple, and in which the legs or prongs are at an angle with relation to each other, instead of parallel, as in the ordinary form of staple; and it consists in first removing sections from the blank at intervals to form the crown or head, and afterward cutting the staple fasteners therefrom.

Reference is had to the accompanying drawings, in which Figure 1 illustrates the method of cutting staple button-fasteners in accordance with my invention. Fig. 2 shows the same method of producing a staple the crown of which is of different form, and Fig. 3 shows still another slight modification.

Referring to the drawings, in which like letters of reference indicate corresponding parts in all the figures, A represents the blank from which the staples are cut. B represents the staples, and C small sections of the metal which are removed from the blank to give form to the crown or head of the staple before the operation of cutting the staples is begun.

In carrying out my method I take a flat strip of sheet metal of the proper thickness and of the width of the staple to be cut, and, by means of a reciprocating die, by a drop-press, or in any other well-known manner, I remove small sections of the metal at intervals, to give the form desired to the head or crown of the fastener.

When it is desired to form a staple with a concave head on the outside and angular on the inside, I remove sections of the form shown

in Fig. 1. When it is designed that the crown or head shall be flat, I remove small triangular sections, as shown at C, Fig. 2. When a fastener is to be produced with a concave crown or head only, the sections removed are of the form shown in Fig. 3.

It is evident that to change the form of the crown of the staple or fastener it will only be necessary to change the form of the die used for removing the sections from the approximate longitudinal center of the blank, so that in this manner I am enabled to produce a fastener having a head or crown of almost any desired form. After the blanks are thus prepared the staples are cut, with their legs immediately adjacent to each other, either consecutively or simultaneously and without waste of material.

As the legs of the staple or fastener are at an angle to each other, instead of parallel, as is common, and as the sides of the blank are parallel to each other, it is obvious that the cutting and pointing of the fastener is done at one end and the same operation.

I do not in this application make any claim for the fastener, as I have made it the subject of a separate application filed contemporaneously herewith.

By my improved method I am enabled to produce sheet-metal fasteners in a very rapid and economical manner, with but little or no waste of material, and without specially-adapted mechanism for the purpose.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The method of forming sheet-metal staples which consists in taking a flat sheet-metal blank of the proper width and thickness, removing small sections therefrom at intervals to form the crown of the fastener, and afterward cutting and pointing the fasteners at one end and the same operation, substantially as set forth.

In testimony whereof I have affixed my signature in presence of two witnesses.

JAMES F. THAYER.

Witnesses:

GEO. W. PRENTICE,
E. FISHER.







No. 15714

IN THE

United States Court of Appeals

FOR THE NINTH CIRCUIT

TALON, INC.,

Appellant,

vs.

UNION SLIDE FASTENER, INC.,

Appellee.

APPELLANT'S OPENING BRIEF.

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PAUL P. O'BRIEN, CLERK



TOPICAL INDEX

	PAGE
Jurisdiction	2
Statement of the case.....	2
Short statement of major questions involved.....	3
First Question—Validity of Silberman '793.....	3
Second Question—Defendant infringes Silberman '793.....	5
Third Question—Defendant is not licensed under Silberman '793	5
Fourth Question—Plaintiff is not estopped to sue under Sil- berman '793	6
Fifth Question—Plaintiff stole nothing from defendant.....	6
Sixth Question—Unclean hands and the antitrust laws.....	7
Seventh Question—The award of attorney's fees.....	7
The invention of Silberman '793.....	8
Kind of product made on machine of Silberman '793.....	8
The Silberman '793 machine.....	9
No anticipation of Silberman.....	10
There are many other evidences of invention.....	11
Defendant infringes Silberman.....	12
Unclean hands and the antitrust laws.....	12
Quota license agreements.....	13
Intent and attempt to monopolize.....	16
A. The American agreement.....	16
B. The Los Angeles conference.....	17
Exhibit 7, Cap-Tin license agreement.....	18
Specification of errors.....	21

	PAGE
Argument.....	30
The Silberman patent is a valid patent covering a true combination	30
The Silberman patent in suit describes and claims an operative machine	34
The Silberman patent is not anticipated and involves invention over the prior art.....	38
Silberman is the sole inventor of patent No. 2,437,793.....	46
Defendant has no license under the Silberman patent.....	48
The plaintiff is not estopped to enforce its patent rights.....	51
Infringement	53
Plaintiff stole nothing from defendant.....	56
(a) The spring leaves used in Plaintiff's Exhibit 5 machine to carry the ram.....	58
(b) The lip on the closing jaw for clamping the zipper elements on the tape.....	59
(c) An ejector die on the cut off punch to prevent zipper elements bunching up.....	60
(d) No "V"-shaped ram as in the Silberman patent.....	60
(e) A device for providing spacing between sets of zipper elements	60
(f) The vacuum or suction device for removing metal chips	61
Unclean hands and the antitrust laws.....	61
The controlling law.....	61
Attempt to monopolize defined.....	63
Evidence before the court.....	65
American agreement	65

	PAGE
Los Angeles conference.....	66
Quota agreements not restrictive.....	66
No distinction over DuPont case.....	67
Exhibit 7, Cap-Tin license agreement.....	71
Introduction	71
Exhibit 7 agreement confined to fastener units manufac- tured under licensed patents.....	72
Even as misconstrued, Exhibit 7 license not illegal.....	73
The court erred in awarding attorneys' fees to defendant and the award is excessive.....	75
Conclusion	77
Appendices :	
Appendix I. List of Exhibits.	
Appendix II. Copy of Plaintiff's Exhibit 4.	

TABLE OF AUTHORITIES CITED

CASES	PAGE
Amercian Tobacco Co. v. United States, 328 U. S. 781.....	63
Anderson, Inc. v. Eastman, 16 Fed. Supp. 513.....	2, 39
Associated Plastics Companies v. Gits Molding Corp., 182 F. 2d 1000	76
Automatic Radio Mfg. Co., Inc. v. Hazeltine Research, Inc., 339 U. S. 827.....	74
Bourns v. Edcliff Instruments, 125 Fed. Supp. 503.....	39
Ciniotti Unhairing Co. v. American Unhairing Mach. Co, 115 Fed. 498	55
Cutter Laboratories v. Lypophile-Cryochem Corp., 179 F. 2d 80	62, 63
Day Brite Lighting v. Ruby Lighting Corp., 191 F. 2d 521.....	77
Dubil v. Rayford Camp & Co., 184 F. 2d 899.....	8, 77
Elizabeth v. Pavement Co., 97 U. S. 126.....	55
General Electric Supply Corp. v Maytag Co., 100 F. 2d 218.....	39
Great Lakes Equipment Co. v. Fluid Systems, Inc., 217 F. 2d 613	37
Hookless Fastener Co. v. G. E. Prentice Mfg. Co., 14 F. 2d 1014	15
Hookless Fastener Co. v. G. E. Prentice Mfg. Co., 18 F. 2d 1016	15
Hookless Fastener Co. v. G. E. Prentice Mfg. Co., 68 F. 2d 848	15
Hookless Fastener Co. v. G. E. Prentice Mfg. Co., 68 F. 2d 940	15
Hookless Fastener Co. v. G. E. Prentice Mfg. Co., 75 F. 2d 264	15
Hookless Fastener Co. v. Greenberg, 18 Fed. Supp. 296.....	15
Hookless Fastener Co. v. Greenberg, 98 F. 2d 1020.....	15
Hookless Fastener Co. v. H. L. Rodgers Co., Inc., 26 F. 2d 264	15
Hookless Fastener Co. v. Lion Fastener, Inc., 7 Fed. Supp. 87....	15
Hookless Fastener Co. v. Lion Fastener Co., 72 F. 2d 985.....	15
Hookless Fastener Co. v. Lion Fastener, Inc., 84 F. 2d 579.....	15

	PAGE
Kurtz v. Belle Hat Lining Co., 280 Fed. 277.....	38
Lewt Corp. v. Health-Mor, Inc., 181 F. 2d 855.....	37
Modern Products Supply Co. v. Dranchenberg, 132 F. 2d 203....	37
Park-in-Theatres v. Perkins, 190 F. 2d 137.....	77
Reynolds v. Whitin Mach. Works, 167 F. 2d 78.....	40
Stearns v. Tinker & Razor, 220 F. 2d 49.....	33
Stebler v. Riverside Heights Orange Growers' Ass'n, 205 Fed. 735, cert. den. 231 U. S. 748.....	55
The Filtex Corporation v. Atiyeh, 216 F. 2d 433.....	37
Topliff v. Topliff, 145 U. S. 156.....	39
United States v. E. I. DuPont de Nemours & Co., 118 Fed. Supp. 41, aff'd 351 U. S. 377.....	67, 68, 70, 71
United States v. General Electric Co., 272 U. S. 476.....	65
United States v. Griffith, 334 U. S. 100.....	63
United States v. Line Material Co., 33 U. S. 287.....	65
Webster Loom Co. v. Higgins, 105 U. S. 580.....	34
Williams Iron Works v. Hughes Tool Co., 109 F. 2d 500.....	39

STATUTES

Sherman Act, Sec. 2	12, 61
United States Code, Title 28, Sec. 1291.....	2
United States Code, Title 28, Sec. 1292.....	2
United States Code, Title 28, Sec. 1338.....	2
United States Code, Title 35, Sec. 282(4).....	45

No. 15714

IN THE

United States Court of Appeals

FOR THE NINTH CIRCUIT

TALON, INC.,

Appellant,

vs.

UNION SLIDE FASTENER, INC.,

Appellee.

APPELLANT'S OPENING BRIEF.

This is an appeal from the judgment of the District Court for the Southern District of California (Carter, J.) dismissing an action for patent infringement [R. 193]. Judgment was entered on findings and conclusions [R. 172-193] based on a "Memorandum to Counsel" [R. 130-157], which is in effect a written decision by the trial judge. The judgment, besides dismissing plaintiff's complaint, also dismissed defendant's counterclaim under the Antitrust Laws, but awarded defendant \$20,000.00 in attorney's fees.

The case went to trial upon plaintiff's complaint of infringement of two patents, Poux No. 2,078,017 and Silberman No. 2,437,793 [Ex. 3, R. 1664]. Plaintiff-appellant has appealed herein from adverse judgment against both such patents, but in view of the fact that Poux No. 2,078,017 expired before trial, was held in-

operative and unworkable,¹ and but one single recovery could be had by plaintiff in any case, plaintiff-appellant hereby withdraws its appeal insofar as it relates to Poux '017 and presses its appeal solely on Silberman '793 and the award of attorney's fees. The issues are thus materially simplified.

Defendant has cross-appealed from the dismissal of the counterclaim.

JURISDICTION.

The complaint herein is for infringement of United States Letters Patent. Jurisdiction therein is founded on 28 U. S. C. 1338. Appellate jurisdiction of this court is based upon 28 U. S. C. 1291, and upon 28 U. S. C. 1292. Judgment was entered May 31, 1957. This appeal was taken June 21, 1957, within the statutory period.

STATEMENT OF THE CASE.

This action was instituted October 17, 1949 by the filing in the usual form of plaintiff's complaint for infringement of six Letters Patent of the United States [R. 3-7]. At a pretrial hearing on November 24, 1952, the complaint was dismissed as to four of the patents, leaving in issue only Poux No. 2,078,017 and Silberman No. 2,437,793 [R. 98-99]. The judgment of the District Court held both of these patents invalid and not infringed [R. 193]. It also dismissed a counterclaim under the Antitrust Laws which is the subject of a cross-appeal. While dismissing the counterclaim for failure

¹Acquiescence in a holding that Poux '017 is inoperative also removes it as a prior art reference against Silberman '793. An inoperative patent is not a prior art reference. *Anderson, Inc. v. Eastman*, 16 Fed. Supp. 513, and cases cited *infra*, page 39.

of defendant to prove damage, the District Court held plaintiff to have violated such laws and to be therefore barred from enforcing its patents on the misuse doctrine [Conclusions of Law VIII, IX, X, XII, XIII, XV, R. 190-192].

Since plaintiff-appellant has abandoned its appeal as to Poux '017, this case now involves only the issues of validity and infringement of Silberman '793, and the antitrust and patent misuse issues, and the award of attorney's fees.

SHORT STATEMENT OF MAJOR QUESTIONS INVOLVED.

First Question—Validity of Silberman '793.

The first and most important question presented on this appeal is the validity of Silberman patent 2,437,793, for "Zipper Manufacturing Machinery," hereafter referred to as "Silberman '793."

The lower court found that plaintiff's proofs failed to show that a machine of the claims in issue of Silberman '793 ever operated [Finding XX, R. 181]; that the claims contain machine elements shown in the prior art, particularly Sundback patent 1,331,884 [Finding XI, R. 177]; concluded as a matter of law that the patent is invalid as being an aggregation and not a patentable combination and that plaintiff's proofs failed on the issue that the machine of Silberman '793 ever operated [Conclusion II, R. 189]; and found that Silberman was not the sole inventor because the claims in issue were at least in part, the work of Havekost [Finding XXVI, R. 182]. (Specification of Errors III and XXIX.) There is no finding of fact that Silberman was anticipated by the prior art or does not

involve invention over the prior art. The erroneous finding of inoperativeness apparently dominated the conclusion that there was an aggregation and not patentable combination in the Silberman claims in issue.

Finding XX [R. 181], that plaintiff failed to show that a machine of the claims in issue of the Silberman '793 ever operated is clearly erroneous. Defendant's president, Phillip Lipson, a witness fully accredited by the lower court [Finding XXI, R. 181], unequivocally testified that machines which were operated and used in production by California Slide Fastener Company were "identical" with the Silberman patent, in suit [R. 774, 775, and 802]. Other witnesses confirmed these essential facts. There is no substantial evidence in support of this erroneous Finding XX.

The conclusion of the lower court that:

"Silberman patent No. 2,437,793 is invalid in view of the prior art as being an aggregation and not a patentable combination bringing about a new result and *plaintiff's proofs failed on the issue that the machine of Silberman '793 ever operated*" [Conclusion II, R. 189; emphasis ours],

obviously was predicated on erroneous Finding XX. We will show that Silberman '793 brought about a new result and meets every test for a patentable combination and that there is no anticipation.

Finding XXVII [R. 182] that Silberman was not the sole inventor of the claims in issue of his '793 patent and that the invention was, at least in part, the work of Havekost is clearly erroneous. Havekost testified by deposition [R. 1477]. According to Havekost's own admissions, his

work for Silberman terminated several years before the application for the Silberman patent was filed, it concerned a Conmar type of machine and had nothing to do with the machine described and claimed in the Silberman '793 claims in issue. The court so found at one time [R. 1145-1146].

Second Question—Defendant Infringes Silberman '793.

Infringement of Silberman '793 is obvious if the patent is valid. The Court was in error in concluding as a matter of law that the use of the claimed combination of Silberman to make a square shouldered zipper element avoided infringement. During the trial the Court determined that infringement was not an issue as to Silberman '793 if the claims in suit were valid [R. 340, 343] and defendant so conceded as to this patent [R. 343].

Third Question—Defendant Is Not Licensed Under Silberman '793.

The defense of the verbal license to defendant from Silberman [Finding XXII, R. 181, and Conclusions III and VII, R. 189] must fail because the two witnesses for defendant whose testimony covered the alleged events show conclusively that, although Silberman in effect said to defendant that if defendant refrained from selling machines in Europe, he (Silberman) would not sue for infringement in the United States, one witness for defendant testified that no agreement was made and the other (Mr. Lipson) made a counter offer that was not accepted. To this the District Court once agreed [R. 1141]. This Finding XXII [R. 181] and Conclusions III and VIII [R. 189], are clearly erroneous.

Fourth Question—Plaintiff Is Not Estopped to Sue Under Silberman '793.

The defense of estoppel is based on an alleged statement by plaintiff's Vice President, McKee, on inspecting defendant's plant on April 15, 1948 that he saw no infringement of patents then owned by plaintiff [Findings XV, R. 179, and XXIII, R. 182, and Conclusion VII, R. 189]. Plaintiff acquired Silberman '793 one year later. Plaintiff denies that any such statement was made, but, in any event, defendant's president Lipson testified that he placed no reliance on such statement *and again* the District Court so decided at one time [R. 1141].

Fifth Question—Plaintiff Stole Nothing From Defendant.

The District Court found that plaintiff used its inspection of defendant's machinery to learn of improvements made by defendant and used such improvements without compensating defendant [Findings XII, R. 177, and XXXXVI, R. 187, and Conclusions VII, R. 189, and XI, R. 191]. We will show that these findings and conclusions are clearly in error. Talon's Vice President McKee spent around one-half hour in Union's plant on April 15, 1948. Union's president Lipson testified that the improvements in question were not made until 1949 which was one year after McKee's visit. Furthermore, each of the specified "improvements" was old in the prior art of record. Other of the specified improvements never were used by defendant. Other evidence shows the clear error in these findings and conclusions and there is no supporting evidence.

Sixth Question—Unclean Hands and the Antitrust Laws.

The sixth question is whether plaintiff intended and attempted to monopolize a substantial part of the zipper market so that said intent and attempt, coupled with the quota licenses, constituted misuse of the patent in suit. We will show that the District Court committed clear legal error in finding an intent and attempt to monopolize the zipper market on the basis of a 1934 agreement and an inclusive conference held in Los Angeles on September 29, 1949. Where a monopoly is found to exist, an intent and attempt to monopolize is readily presumed. In the instant case, however, no monopoly was found to exist and the intent and attempt to create one should be proved and not, in effect, presumed as did the District Court.

A related question is whether Exhibit 7 constitutes a misuse of Silberman '793 and ties in unpatented with patented art. We will show that the District Court misconstrued Exhibit 7 but that, even as so misconstrued, there is no illegal extension of the patent monopoly.

Seventh Question—The Award of Attorney's Fees.

The District Court found that plaintiff considered the validity of Poux 5107 and Silberman '793 to be questionable and that the present action was brought by plaintiff in bad faith [Findings XXXXIII and XXXXV, R. 186]. We will show that these findings are clearly erroneous. There is nothing wrong with plaintiff's having settled previous suits on the Poux Patent, and as to Silberman, Talon acquired title only shortly before this action was filed.

There was no bad faith on the part of the plaintiff and, therefore, this is not a proper case for the award of attorneys' fees in any amount.

In any event, the award of \$20,000 is clearly excessive in view of the circumstances of this case.

Dubil v. Rayford Camp & Co., 184 F. 2d 899.

THE INVENTION OF SILBERMAN '793.

Kind of Product Made on Machine of Silberman '793.

The product made on machines of the kind here on appeal is illustrated in Defendant's Exhibit AX, a short length of "zipper chain" made on the accused machine. Two of these zipper chains are combined with a slider to make a conventional zipper.

The interlocking elements that serve to lock the two zipper chains together are the series of tiny metal "zipper elements," each of which has a projection on one side and a recess on the other. The projections and recesses of the zipper elements on one chain interlock with the recesses and projections on the other chain to hold the two chains together when the zipper is closed. These zipper elements must be made with great precision, be equally spaced a precise distance from each other, and be firmly clamped in perfect alignment on the edge of the fabric tape at high speed and very low cost in order to have a commercially acceptable product. Faulty spacing of the elements on the tape, or failure to align all elements on the tape, or failure to firmly clamp each element in place, produces unsatisfactory zippers. The precision essential to the making of these minute zipper elements and the need for precision of attachment to the tape have long been recognized as major problems in the zipper industry.

The Silberman '793 Machine.

Silberman '793 was prepared in detail from a completed machine for making zipper chain [R. 1038-1039, 1046]. It includes ten sheets of drawings showing 69 figures. In order to facilitate its consideration we have reproduced Plaintiff's Exhibit 4 in Appendix 2 to this brief. Plate 1 of Exhibit 4 presents a breakdown of claim 40 of Silberman '793 into its machine elements. Colored lines extending to the corresponding machine element shown in Plate 2. Plate 2 shows in perspective and in greatly enlarged skeleton form, the claimed elements of Silberman '793, separately colored, and their relationship to each other. Plate 3 shows the corresponding elements of the accused machine.

In the machine of Silberman '793 as illustrated in Plate 2 of Exhibit 4, the (green) fabric tape is moved vertically through the machine by the (brown) tape feed. The (pink) metal strip 15, from which the zipper elements are formed and applied to the (green) tape, is gripped by a pair of (blue) feed rollers 14 and fed forward to a position where the legs on the advancing end of the metal strip 15 straddle the corded edge of the (green) tape. The vertically reciprocating ram (indicated by the heavy red line 10) and the base of the machine (indicated by the broken black bottom line), carry complementary (orange) punch and die elements 11 and 16 that start to form the projection on the top side of the (pink) metal strip and the recess in the underside of the strip at about the same time that the upper and lower parts of the (orange) cut-off die 12 and 17 start to separate the end zipper element (darker pink) from the metal strip 15. At about the same

time the (yellow) clamping blades 18 that slide horizontally on the base, are actuated by (purple) cams 13 on the ram 10 of the machine, to clamp the legs of the end zipper element around the beaded edge of the (green) tape.

Thus, in the operation of the machine, the metal strip is firmly gripped between the feed rollers 14 and between the projection and recess forming punch 16 and die 11 while the clamping blades 18 clamp the zipper element on the tape and the cut-off dies 12 and 17 act to separate the end zipper element from the metal strip 15, all working together during the downward movement of the ram to always hold the end zipper element in correct register with the tape until it is accurately clamped in position on the tape and severed from the metal strip.

This is a new mode of operation performing new functions and accomplishing new and very important results never before successfully performed in a zipper manufacturing machine.

Nowhere in the prior art do we find this cooperative relationship of machine elements in any arrangement that performs this mode of operation or employs the feed rolls, dies, cut-off and clamping-on tools, operating together, to completely form and apply a zipper element to the tape while the element is still a part of the metal strip and under complete control during the entire operation.

No Anticipation of Silberman.

This matter is dealt with in detail as to each prior art reference under our argument and will not be repeated here.

There Are Many Other Evidences of Invention.

The evidence shows that the machine of plaintiff's prior art Sundback patent 1,331,884 [issue in 1920, R. 1724], primarily relied upon by the lower court as showing some of the machine elements used in the claimed combination [Findings XI, R. 177, and XIV, R. 179], was commercially used by plaintiff but was superseded by a second Sundback machine made under plaintiff's later Sundback patent 1,467,015 [issued in 1923, R. 1690 and R. 481-482]. This second Sundback machine operated to individually form and separately attach 600 zipper elements to the fabric tape in one minute and it was later improved to a point where it would attach 800 zipper elements per minute [R. 469 and 482]. This second Sundback machine separately formed each zipper element from wire previously rolled to a "Y"-shape and separately attached each such element to the fabric tape.

Other concerns in the industry, particularly Conmar Products Corporation, used one machine for making a long length of connected zipper elements and a second machine for separating them from the string and separately attaching them to the tape. The District Court characterized this kind of prior art machine in the following language:

"At the time of Poux '017, there were machines in use which formed the individual zipper elements and other machines which attached them to the cloth tape. This necessitated costly and precise handling of the individual and separate zipper elements and it was difficult to properly set them on the tapes . . ."
[Finding VII, R. 174.]

This finding applies to most of the prior art here of record.

Plaintiff continued to exclusively use this second type of Sundback machine until the machine of Silberman '793 patent in suit came along. It then proceeded to substitute the Silberman machines for the improved second Sundback machine [R. 481-486].

Defendant Infringes Silberman.

On the question of infringement, the substantial error complained of is that the lower court predicated his finding of noninfringement on an erroneous conclusion as a matter of law that since defendant's machine produced square shouldered zipper elements instead of the round shouldered elements shown in the patent in suit, defendant avoided infringement. The court at one time indicated that there was no serious question of infringement [R. 340; Specification of Errors IV, R. 1599].

Claim 40, reproduced in Appendix 2, is typical. We will elaborate under the argument as to infringement, but we should note here that several times during the trial the District Judge indicated that there seemed to be no issue as to infringement and we think infringement is obvious.

UNCLEAN HANDS AND THE ANTITRUST LAWS.

The District Court based its finding of unclean hands on the so-called quota license agreements coupled with an intent and attempt to monopolize in violation of Section 2 of the Sherman Act. The Court also found that one agreement, Exhibit 7 which is the Talon-Cap-Tin-Silber-

man license agreement dated July 16, 1945, tied in unpatented with patented art when the licensee exceeded its quota of production provided for [Finding XXXVIII, R. 185].

Quota License Agreements.

While Talon had quite a few outstanding license agreements, only the so-called quota agreements were relied upon by the Court in support of its finding of misuse.

In the so-called quota agreements, Talon granted licenses under Talon's patents relating to slide fasteners and the methods and manufacture thereof which were royalty-free up to a certain quota and then involved a royalty on the net sales price of fastener units sold over the quota. The over-the-quota royalty rate was generally 5% or less although in one instance it was 15% [Ex. 11]. In return for this license, Talon received a royalty-free license under certain of the licensee's slide fastener patents. All quotas and royalties were based on products made on machines and processes licensed under Talon's patents. The royalty-free quotas were set very high. Only once did a licensee, Conmar Products Corporation [Ex. 11], ever approach and exceed its quota, and then it was excused from paying royalties thereon by mutual agreement [R. 598, 676] and a new royalty-free license was executed [Ex. 12].

Any implication from Finding XXXIV [R. 184] that some licensees paid royalties to Talon under these agreements is not correct and has no support in the record. When the licensee did not cross-license Talon or give it something of value, Talon negotiated a straight license agreement [R. 609.] Such straight license agreements are

not questioned and Talon did receive royalties from them. Union is not and never has been a party to any type of license agreement with Talon.

There are no provisions in these license agreements which directly or indirectly prohibit or discourage production of fastener units on unlicensed machines or by unlicensed methods so as to constitute an unlawful extension of the scope of the patent monopoly and there is no finding that the agreements themselves constitute misuse. The licensees were free to use any non-infringing methods or machines that they wanted to without incurring an obligation to Talon under its license agreements. Most of the quota license agreements even contain a provision similar or identical to paragraph 10 of the Conmar agreement [Ex. 11] which reads:

“Nothing in this agreement contained shall be construed to obligate licensee to use at any time the method or methods covered by this agreement to the exclusion or disadvantage of any other method available to licensees.”

Except for Exhibit 7, the Silberman '793 patent here on appeal was not involved in any of these quota agreements because it was not owned by Talon when these agreements were executed. In Exhibit 7, Talon received a license under Silberman '793 from David Silberman instead of vice-versa, Exhibit 7 having been executed prior to the assignment of Silberman '793 to Talon. David Silberman, the third party to the Exhibit 7 agreement, is the inventor of Silberman '793. The Poux patent, now expired and not included in this appeal, was one of the patents licensed in the quota agreements.

In general, these agreements were in settlement of patent litigation or threatened litigation by one or both of the parties. While Talon is disposed to settle litigation, it has also prosecuted its suits to conclusion when settlement could not be effected and it has not been afraid to subject its patents to judicial determination. Furthermore, its record in the Courts is impressive in that claims of many of its patents have been considered on their merits and found valid.*

*One or more claims of each of the following patents, which were owned by Talon or Hookless Fastener, the prior name of Talon, have been found valid by District Courts and/or Courts of Appeals:

1,219,881	1,557,381
1,243,458	1,566,996
1,302,606	1,598,183
1,331,884	1,661,144
1,322,650	1,813,433
1,467,015	

The cases involving the above listed patents are reported as follows:

- Hookless Fastener Co. v. G. E. Prentice Mfg. Co.* (D. C. Conn., 1926), 14 F. 2d 1014;
Hookless Fastener Co. v. G. E. Prentice Mfg. Co. (C. C. A. 2, 1927), 18 F. 2d 1016;
Hookless Fastener Co. v. H. L. Rodgers Co. Inc. (D. C. S. D. N. Y., 1928), 26 F. 2d 264;
Hookless Fastener Co. v. Lion Fastener Inc. (D. C. W. D. Pa., 1933), 7 Fed. Supp. 87;
Hookless Fastener Co. v. G. E. Prentice Mfg. Co. (C. C. A. 2, 1934), 68 F. 2d 848;
Hookless Fastener Co. v. G. E. Prentice Mfg. Co. (C. C. A. 2, 1934), 68 F. 2d 940;
Hookless Fastener Co. v. Lion Fastener Co. (C. C. A. 3, 1934), 72 F. 2d 985;
Hookless Fastener Co. v. G. E. Prentice Mfg. Co. (C. C. A. 2, 1935), 75 F. 2d 264;
Hookless Fastener Co. v. Lion Fastener Inc. (C. C. A. 3, 1936), 84 F. 2d 579;
Hookless Fastener Co. v. Greenberg (D. C. Cal., 1937), 18 Fed. Supp. 296;
Hookless Fastener Co. v. Greenberg (C. C. A. 9, 1938), 98 F. 2d 1020.

Intent and Attempt to Monopolize.

A. The American Agreement.

The lower court predicated its conclusion that Talon intended and attempted to monopolize the zipper market on two isolated pieces of evidence [R. 146]. The first piece of evidence is the American agreement [Ex. AH]. This was a license agreement dated May 17, 1934, between Hookless Fastener Company (Talon) on one hand and American Fastener Company and Sterling Novelty Manufacturing Company on the other hand, Hookless Fastener Company being the prior name of Talon. In this agreement Hookless (Talon) licensed Sterling under eleven patents at a royalty rate of 2% of Sterling's aggregate dollar sales. The licensed patents covered both slide fastener units and methods and machines for the manufacture thereof. The agreement was made as a result of a controversy between the parties over patent rights. In a letter agreement dated July 7, 1938 [Ex. AH-2], Talon released American and Sterling from payment of future royalties and royalties then due. The agreement expired by limitation on May 31, 1944 [par. 19, Ex. AH], but was extended from year to year under Poux pin lock Patent No. 1,969,672 until that patent expired on August 7, 1951 [Ex. AH-1].

As of May 17, 1934, when the American agreement was executed, Talon had a proven and dominant patent position. On April 4, 1927, claims of Sundback Patent No. 1,302,606 licensed therein had been found valid by the Second Circuit Court of Appeals (18 F. 2d 1016). On April 5, 1933, claims of Sundback Patent No. 1,243,458 licensed therein had been found valid by a Pennsylvania District Court (7 Fed Supp. 87) and on January

15, 1934, claims of Sundback Patent No. 1,331,884 had been found valid by the Second Circuit Court of Appeals (68 F. 2d 848).

The District Court did not specify in what respect the American agreement was "clearly illegal" [R. 146]. This agreement was received in evidence solely on the question of intent [R. 146].

B. The Los Angeles Conference.

The second piece of evidence on which the Court relied is "the Los Angeles Conference." This was a conference held on September 29, 1949, in the Los Angeles office of Talon and was described at the trial by Phillip Lipson of Union [R. 908-919]. This conference is also described in the depositions of Wilbur B. Jager [Ex. AI; R. 1430-1443], C. F. Detweiler [Ex. AJ; R. 1443-1456], Robert Eisenberg [Ex. AK; R. 1456-1464] and Isadore O. Napp [Ex. AL; R. 1465-1476], all witnesses for defendant. Present at the conference were Mr. Jager, the district sales manager of Talon, Mr. Detweiler, the local sales manager of Talon, Messrs. Napp and Bogash of Roxy Thread Company, Mr. Eisenberg of California Slide Fastener, Inc., and Mr. Lipson of Union. No Officers of Talon were present at this conference.

The conference was nothing more than a general discussion of the problems of the trade, particularly pricing practices.

At the conference, Mr. Jager complained about unfair pricing practices in the area, such as hidden discounts, premium price cutting, and the like. Mr. Jaeger noted that as long as the smaller manufacturers sold their zippers at one-half cent under Talon, Talon could meet competi-

tion because its zippers commanded a higher price by virtue of their name and reputation [R. 910]. He further noted that Talon had met competition in the eastern states by bringing out its Wilzip zipper, which was a low-priced zipper [R. 911]. Mr. Napp said that he would sell zippers one-half cent under Talon regardless of price [R. 915]. Mr. Eisenberg also said that he would meet competition and sell at whatever price he had to [R. 916].

The meeting ended without agreement of any sort [R. 914] in a general discussion with "the usual arguments" [R. 916]. Talon later did introduce the Wilzip zipper but it had no effect because a few months later the Korean war started and zippers were in short supply [R. 917].

Exhibit 7, Cap-Tin License Agreement.

Exhibit 7 is a license agreement between Talon, Cap-Tin Development Corporation and David Silberman, the inventor of the Silberman '793 patent. This license agreement is dated July 16, 1945, and was terminated by the agreement of April 18, 1949, between Talon and Silberman [Ex. 8]. Silberman owned and controlled Cap-Tin as evidenced by the first paragraph of Exhibit 8.

Talon did not own Silberman '793 at any time while Exhibit 7 was in effect. In the Exhibit 7 agreement, Talon granted Cap-Tin a license under United States Patents Nos. 2,026,413, 2,078,016, 2,078,017, 2,169,176 and 1,903,659 and received in return a license under Silberman patent application Serial No. 555,572, now the Silberman '793 patent. Talon did not acquire the Silberman '793 patent until April 19, 1949, when it was assigned to Talon by Silberman pursuant to the Talon-Silberman agreement [Ex. 8]. Talon paid Silberman

ten thousand dollars (\$10,000.00) for an option to buy and an additional sixty-five thousand dollars (\$65,000.00) for Silberman '793 and two pending patent applications [par. 11, Ex. 88].

The pertinent parts of Exhibit 7 are paragraphs 2(a), 2(b), 5(a) and 5(b) which read as follows:

“2. DEFINITION.

“(a) ‘Slide Fastener’ or ‘Fastener’ as the term or terms may be used herein, are defined to mean a complete slide fastener, commonly known as ‘zipper,’ comprising two interlocked stringers, each having a row of interlocking elements attached thereto, together with a slider or actuating member and with or without end stops to limit the movement thereof, the stringers of which Slide Fasteners are made by a process or machine, or both, covered by a claim or claims of any of the aforesaid Letters Patent of TALON.

“(b) ‘Fastener Chain’ as the term is used herein, is defined to mean two interlocked slide fastener stringers made as above specified, each having a row of interlocking fastener elements attached thereto, neither slider nor end stops being assembled on the stringers.

“5. ROYALTY.

“CAP-TIN agrees to pay to TALON as license fees or royalties the following:

“(a) Ten per cent (10%) of the aggregate net dollar sales of all slide fasteners and all fastener chain sold by CAP-TIN during the life of this agreement, which fasteners or fastener chain or parts thereof were made by the use of any machine or process covered by any of the claims of patents enumerated in Paragraph 3(a) hereof in excess of 12,000,000 double yards per year of slide fasteners

or fastener chain. CAP-TIN agrees that all quantities of fasteners or fastener chain which it may acquire from others and resell, shall be included along with fasteners or fastener chain made by machines licensed herein to CAP-TIN in the computation of the royalties agreed to be paid in this Paragraph 5(a) hereof. Nothing herein contained, however, shall be construed as granting a license to any party other than CAP-TIN under the patents enumerated in this agreement.

“(b) ‘Royalty Sales.’ The royalty contemplated in this Paragraph 5(b) hereof for the use of one or more of the inventions embodied in the aforesaid patents of TALON, to-wit: Binns 2,026,413, Poux 2,078,016, Poux 2,078,017, Poux 2,169,176 and Smith 1,903,659, is intended to be a percentage of the value of the product resulting from the use of machines and processes covered by said patents, namely, the fastener chain. Due to the difficulties in proportioning the value of a fastener chain to the value of a complete slide fastener and the methods of accounting customarily used in the slide fastener business, it is agreed that the basis to be used for calculating royalties under this paragraph shall be the net selling price of slide fastener units.”

The District Court found that Exhibit 7 “clearly ties in unpatented with patented art when the licensee exceeded its quota of production provided for” [Finding XXXVII, R. 185]. Cap-Tin never reached or exceeded its quota [R. 676].

SPECIFICATION OF ERRORS.

The errors relied upon and urged in the appeal are as follows:

“III.

“The District Court erred in adjudging that Claims 1 through 4, 13 and 32 through 40 of United States Letters Patent No. 2,437,793 to Silberman are invalid and void.

“IV.

“The District Court erred in adjudging that Claims 1 through 4, 13 and 32 through 40 of United States Letters Patent No. 2,437,793 to Silberman are not infringed by defendant.

“V.

“The District Court erred in adjudging that defendant have and recover from plaintiff the sum of \$20,000.00 in attorneys’ fees.

“X.

“The District Court erred in failing to find that while plaintiff’s machine, Exhibit 5, has improvements over Silberman Patent No. 2,437,793 the same embodies the patented invention of said patent and each of the essential elements thereof or its full mechanical equivalent.

“XII.

“The District Court erred in finding that plaintiff’s proof fails to show that a machine of the claims in issue of Silberman Patent No. 2,437,793 ever operated.

“XIII.

“The District Court erred in entering Finding No. XXI and in permitting the defendant to attempt to impeach its own witness, Loew.

“XIV.

“The District Court erred in finding that Silberman entered into a verbal license agreement with defendant and subsequent actions of defendant including expansion of defendant’s facilities for manufacturing zippers were made in reliance upon that license.

“XV.

“The District Court erred in finding that defendant relied upon plaintiff’s McKee’s statement to defendant’s Loew that no patents of plaintiff were infringed, and in reliance upon that statement, defendant continued to work on machines it was manufacturing and expended money in expanded manufacturing facilities.

“XVI.

“The District Court erred in entering Finding No. XXV reading as follows:

“‘Letters, Exhibits 15 and 18, alleged to be notices of infringement on behalf of Silberman to defendant, were written prior to Silberman’s conversation with Loew and Lipson about August 15, 1948, and therefore were prior to the license granted by Silberman to defendant.’

“XVII.

“The District Court erred in finding that Silberman was not the sole inventor of the device of the claims in issue of his Patent No. 2,437,793 and it was at least in part the work of Havekost.

“XVIII.

“The District Court erred in finding that the conference in Los Angeles between plaintiff and the local zipper manufacturers in that city in 1949 was held in an attempt by plaintiff to maintain price control and evidenced an intent to misuse plaintiff’s patents and to violate the antitrust laws.

“XIX.

“The District Court erred in finding that the license agreements entered into by plaintiff produced the net result that the product of plaintiff’s licensees was curtailed.

“XX.

“The District Court erred in finding that the contract, Exhibit 7, clearly ties in unpatented with patented art when the licensee exceeded its quota of production provided for.

“XXI.

“The District Court erred in entering Finding No. XXXIX reading as follows:

“‘The activities of plaintiff in which numerous suits were filed and settled without trial upon the grant of quota licenses which amounted to a scheme to restrict the production of competitors are apparent, and typical of these activities was plaintiff’s commencement of the present action after McKee, an official of plaintiff, had found no infringement and plaintiff apparently made no further inspection or investigation.’

“XXII.

“The District Court erred in entering Finding No. XXXX reading as follows:

“‘Plaintiff intended and attempted to monopolize a substantial part of the zipper market, has misused its patents and has unclean hands.’

“XXIII.

“The District Court erred in finding that plaintiff’s acts in connection with the restricted licenses must necessarily have created a substantial impact on the supply of zippers in interstate commerce in the United States and there was public injury.

“XXIV.

“The District Court erred in entering Finding No. XXXXIII reading as follows:

“‘Plaintiff’s conduct is convincing that it considered the validity of Poux ’017 and Silberman ’793 as being questionable and had not heretofore permitted their adjudication.’

“XXV.

“The District Court erred in entering Finding No. XXXXV reading as follows:

“‘The action was brought by plaintiff in bad faith and without reasonable belief in the validity of the patents and the litigation proves harassment and misconduct on plaintiff’s part.’

“XXVI.

“The District Court erred in entering Finding No. XXXXVI reading as follows:

“‘Plaintiff, under the pretext of examining defendant’s machinery to determine possible patent infringement of which it had no actual knowledge, secured consent to examine defendant’s machinery only for the purpose of determining whether infringement existed, and while under color of such an examination learned of a number of improvements which defendant had made upon zipper machinery and copied defendant’s improvements in plaintiff’s machinery, Exhibit 5, without compensation to defendant. These improvements by defendant are those listed in Finding XII.’

“XXVII.

“The District Court erred in entering Finding No. XXXXVIII reading as follows:

“‘Having considered the acts of plaintiff leading up to the prosecution of this action against defendant and the fact that plaintiff has acted in bad faith

and with unclean hands and has misused its patents, defendant is entitled to reasonable attorneys' fees. Taking into consideration the nature and complexity of the case; the length of the trial; the depositions taken; the experience, standing and eminence of counsel; the quality of skill demonstrated; the importance of the case to the plaintiff and defendant; the risk of the client and responsibility of the counsel; the time fairly and properly expended in preparation out of court; time in court; and the results accomplished, it is found that the reasonable value of the services of attorneys for the defendant is Twenty Thousand Dollars (\$20,000.00).

“‘In considering the relative importance of the work done by defendant's attorneys with regard to violation of the antitrust laws, while it was done in part in support of defendant's counterclaim, it was also done as part of the work showing the defense of unclean hands and the material regarding antitrust violations was used as a shield in defense of the patent suit as well as a sword in connection with the counterclaim. It was nearly all pertinent to the defense to plaintiff's action, even though the counterclaim failed.

“‘It is found that the antitrust problem is the only substantial issue if an appeal is taken. To provide for the contingency, that on appeal the reviewing court should find no violation of antitrust laws and be confronted with an apportionment of fees, and a remand for the purpose of fixing of fees without regard to services rendered on the antitrust violation, then excluding the services regarding antitrust violations; the reasonable value of attorneys' fees for defendant is Eighteen Thousand and Five Hundred Dollars (\$18,500.00).’

“XXIX.

“The District Court erred in concluding that Silberman Patent No. 2,437,793 is invalid in view of the prior art as being an aggregation and not a patentable combination bringing about a new result and plaintiff’s proofs failed on the issue that the machine of Silberman ’793 ever operated.

“XXX.

“The District Court erred in concluding that the understanding between Silberman and Defendant on or about August 15, 1948, was relied upon by defendant which changed its position in reliance thereon and defendant was therefore licensed under Silberman ’793.

“XXXI.

“The District Court erred in concluding that plaintiff purchased Silberman ’793 subject to the existing licenses from Silberman to defendant and was estopped from thereafter withdrawing the license or charging that the defendant infringed.

“XXXII.

“The District Court erred in concluding that Silberman was not the sole inventor of his patent in suit.

“XXXIV.

“The District Court erred in concluding that reliance by defendant upon Silberman’s statement that he would not sue defendant for infringement under his patent ’793 if defendant refrained from selling machines in certain export markets and plaintiff’s officer McKee’s report to plaintiff which failed to indicate infringement and McKee’s statement to Loew, former president of defendant, that there was no infringement, and defendant’s reliance there-

on which included expansion of defendant's facilities created an estoppel against plaintiff to subsequently assert infringement and constituted a waiver by plaintiff of a right to sue.

“XXXV.

“The District Court erred in concluding that by reason of the license agreements entered into between plaintiff and a number of other competing companies, and by further reason of conduct of plaintiff, plaintiff was guilty of misuse of its patents, bad faith, unclean hands and violation of the antitrust laws. Therefore, plaintiff is not entitled to maintain this action even if the patents in suit were valid and/or infringed.

“XXXVI.

“The District Court erred in concluding that plaintiff's contracts between it and competing companies and its attempts to control prices in the Los Angeles area accompanied by a threat of a price war if prices were not controlled, constitute a violation of the anti-trust laws.

“XXXVII.

“The District Court erred in concluding that the production restricting contracts entered into between plaintiff and its competitors, the circumstances under which many of those contracts were made, the attempt to control prices in the Los Angeles area, the introduction of a cheaper and inferior brand of zipper in the Los Angeles area subsequent to the attempt to control prices there, the appropriation by plaintiff of improvements made by defendant on its machines under the guise of an infringement investigation, and the purchase of the Silberman patent '793 shortly prior to suit against defendant and the subsequent filing of said suit all constitute steps in

a deliberate scheme to control zipper production in the Los Angeles area and throughout the United States.

“XXXVIII.

“The District Court erred in concluding that plaintiff was guilty of bad faith amounting to fraud in securing consent to inspect defendant’s machinery for possible patent infringement and in utilizing such inspection to gain from defendant numerous improvements in zipper machinery which were incorporated in plaintiff’s machines without compensation to defendant.

“XXXIX.

“The District Court erred in concluding that plaintiff through its license agreements with competitors compelled the payment of royalties on unpatented materials and therefore misused its patents in violation of the antitrust laws.

“XXXX.

“The District Court erred in concluding that the antitrust laws may be used as a shield as well as a sword and are available in this case as a complete defense against infringement and the validity of the patents.

“XXXI.

“The District Court erred in concluding that as a matter of law the patents in suit have been misused.

“XXXII.

“The District Court erred in concluding that the acts of plaintiff in misuse of its patents and in violation of the antitrust laws substantially affected interstate commerce in zippers and the public was injured.

“XXXXIII.

“The District Court erred in concluding that in view of the conduct of plaintiff in connection with events leading up to and the bringing of this suit, as set forth in the findings of fact, it is held that defendant is entitled to an award of attorneys’ fees in the amount of Twenty Thousand (\$20,000.00) Dollars. In the event that on appeal the reviewing court should find no violation of the antitrust laws and be confronted with an apportionment of fees, and a remand for the purpose of fixing such fees without regard to services rendered on the antitrust violation, it is found that, excluding services regarding antitrust laws violations, the reasonable value of attorneys’ fees for defendant is Eighteen Thousand Five Hundred (\$18,500.00) Dollars.

“XXXXIV.

“The District Court erred in failing to conclude that prior to the trial of this action, plaintiff had purged itself of any possible illegal conduct under the antitrust laws and had thoroughly cleansed its hands.”

ARGUMENT.

The Silberman Patent Is a Valid Patent Covering a True Combination.

The Silberman Patent is for a machine for making slide fasteners or zippers. It takes a flat strip of metal and feeds it horizontally over a base and it takes a fabric tape and feeds it vertically in a path intersecting the line of feed of the strip. In the process, the strip is acted upon by punches and dies carried by the ram and base of the machine: (a) to punch up a "head," leaving a downwardly facing recess; and (b) to cut off the end element and simultaneously attach it to the tape, while the metal strip is firmly gripped by the feeding means, the punches and the dies [R. 536]. The cutting off of the end element forms the outline of the legs of the ensuing element. This is done continuously at high speed.

So far as pertinent to this case, the machine patented comprises: feed means for the tape; feed means for the strip; a ram carrying a punch and a die and cams; and a base housing a punch and a die and closing jaws for clamping the zipper elements on the tape.

The Silberman Patent discloses a new, additional and different function from any prior art machine and thus qualifies as a true combination.

The additional and different function lies in the fact that the ram which forms the projections and recesses on the strip of metal while the end element is being clamped on the tape, also is the means which cuts off the endmost element as it actuates the closing jaws to attach the element to the tape which moves in a fixed path past the end of the strip. Thus the element is always under complete

control while it is being clamped on the tape. There is a new cooperative relationship in the Silberman patent between the ram and the tools carried by or actuated by it which produces the new result of holding the strip and the end element in a vise-like grip to securely position the same as the legs are being closed about the tape and as the end element is being severed from the strip. Nowhere in the prior art do we find this cooperative relationship or this result.

The advantages of this new mode of operation were summarized by plaintiff's expert at the conclusion of the plaintiff's case as follows:

"The Court: Now, what new results do you contend from Silberman—what new and different results do you content results from Silberman?"

The Witness: I would say it is this, your Honor. First, for the first time in the art you could build an inexpensive machine which would operate at high speed and produce at high speed a commercially satisfactory zipper chain or stringer.

That by the particular arrangement of the punches and dies control is maintained during the manufacture of the zipper element and that control is maintained until the zipper element is securely fastened to the tape.

It is a machine in which the elements are readily timed for operation and maintained in correct time relationship and that is due to operating all of the manufacturing and attaching mechanisms directly from one structure, namely, ram of the machine.

In summarizing I might say it is an inexpensive machine that maintains complete control during the manufacturing and attaching of the elements so you

get reasonable accuracy in attaching the elements to the tape.

“It eliminates scrap.

It is extremely fast.

It requires only a single machine whereas the other methods require two machines and some three machines” [R. 1079-1080].

Referring to Appendix 2 to this brief, the elements of the Silberman Patent are shown (as well as defendant’s accused device). The ram is not shown but is represented by the dark red lines 10. The ram is reciprocated toward and away from the base and carries the head forming die 11, the cut off punch 12 and the cams 13.

The base carries the strip feeding rolls 14, the strip 15, the head forming punch 16, the cut off die 17 and the closing jaws 18.

These cooperate as follows: The strip is always firmly gripped between the feed rolls 16. As the ram descends, the die 11 and punch 12 engage the strip and hold it in a vise-like grip, finally forcing the strip over the punch 16 and severing the end element, but simultaneously the beveled faces of the cams 13 engage complementary faces on the jaws 18 and force the jaws to close the legs of the end element on the tape 19. The end element is thus always under control until it is affixed to the tape, and the ram assists in the multiple functions of forming the head; forming the outline of the legs of the next ensuing element; clamping the end element until it is severed; severing the end element and clamping its legs about the tape [see R. 280-287].

This is a new function and a new cooperative relationship. We challenge the defendant to show to this Court any prior device which operates in this manner and performs these functions in this way. There is none, and this being true, Conclusion of Law II [R. 189], *supra* p. 4, to the effect that Silberman is an aggregation and not a combination bringing about a new result is obviously clearly erroneous.

Based upon this premise, that the Silberman Patent is a true combination having new function and a new cooperative relationship of elements, it then becomes irrelevant that the various elements of the combination in other relationships may be individually old in the art. Finding XVI [R. 180] is thus strictly immaterial.

In this respect, this case is controlled by this Court's decision in *Stearns v. Tinker & Rasor*, 220 F. 2d 49, wherein this Court reversed a similar ruling saying:

“Without the support of the subsidiary findings which we hold are clearly erroneous, the finding of the court below that the combination of old elements in the Stearns patent does not amount to patentable invention because the elements thereof do not cooperate in any new way or contribute any new and unexpected result must also fall. The elements of the Stearns combination do functionally operate differently in the combination than they did in their old surroundings. As we have determined, the spring electrode for the first time in its use in holiday detectors is rolled, instead of being dragged. In the Stearns detector, the pusher rotably engages and forms a movable electrical contact with the spring electrode so as to roll it and connect it electrically to the high voltage test circuit; and movement of the carriage longitudinally upon the pipe imparts a rolling

movement to the spring electrode. And this different coaction of the elements produces a new and useful result, viz.: The detection of holidays in a more facile and efficient way. *Willard v. Union Tool Co.*, 9 Cir., 253 F. 48, 54; *Long v. Dick*, D. C. Cal., 38 F. Supp. 214, 220; *Application of Ostermann*, 179 F. 2d 1010, 1014, 37 C. C. P. A., Patents, 891, *Imperial Brass Mfg. Co. v. Bonney Forge & Tool Works, Inc.*, D. C. Pa., 38 F. Supp. 829, 830; 69 C. J. S., Patents, §68, page 303; 40 Am. Jur., Sec. 19, p. 543.”

In so holding, this Court was on sound ground. It was applying the rule of *Webster Loom Co. v. Higgins*, 105 U. S. 580, wherein the Court said:

“It may be laid down as a general rule, though perhaps not an invariable one, that if a new combination and arrangement of known elements produces a new and beneficial result never attained before, it is evidence of invention. It was, certainly, a new and useful result to make a loom produce fifty yards a day, when it never before had produced more than forty; and we think that the combination of elements by which this was effected, even if those elements were separately known before, was invention sufficient to form the basis of a patent.”

The Silberman Patent in Suit Describes and Claims an Operative Machine.

The District Court has entered a Finding XX [R. 181], as follows:

“Plaintiff’s proof fails to show that a machine of the claims in issue of Silberman ’793 ever operated.”

This is surprising and obviously erroneous because defendant’s own president and chief witnesses proved it for

us. Perhaps the District Court was free to reject the testimony of Ralph Meech [R. 469, 530] and Henry Burkitt, [R. 1041] both lawyers and plaintiff's witnesses who testified to the operation of machines built by Silberman in accordance with his patent, but we submit it was not free to disregard the only other witnesses who testified on this subject and on whose lips it lays as an admission against interest. Thus Philip Lipson testified as follows:

“Mr. Leonard Lyon: What does he mean by the ‘Silberman machine’?”

The Court: The machine No. 5 I suppose. Is that what you mean, Exhibit No. 5?

The Witness: No, not Exhibit No. 5. I mean the Silberman machine as shown on the patent and as I have seen at California Slide Fastener. I found out later on those were the original Silberman machines.

The Court: You handed me a punch, this one here.

The Witness: That is correct, your Honor.

The Court: Which you call a Silberman machine punch. We will mark this Defendant's Exhibit AS.

(The object referred to was marked Defendant's Exhibit AS for identification.)

Mr. Leonard Lyon: I still don't know, your Honor, where the punch came from.

The Court: And I am going to find out. Where did you get this punch, Exhibit AS?

The Witness: From Mr. Eisenberg of the California Slide Fastener Company.

The Court: And it came out of a machine there that you say is a Silberman machine?

The Witness: Correct.

The Court: Did you study the machine there at California?

The Witness: Yes, your Honor.

The Court: Did you compare it with the Silberman patent '793?

The Witness: Yes, sir.

The Court: And it is your testimony that the California machine from which this punch AS came was designed according to the Silberman patent?

The Witness: Identical, your Honor" [R. 774-775].

* * * * *

"Q. Have you ever seen any similar types of machines as compared to that shown in the Silberman patent? A. Similar in function or in general design?

Q. In its mechanical, functional elements to produce the operations I have previously outlined? A. Yes.

Q. Where have you seen them? A. I have seen it at the California Slide Fastener Company.

Q. Were the machines at California Slide Fastener Company, insofar as its essential operating parts are concerned, built like the elements shown in the Silberman patent? A. The answer I gave before—the California Slide Fastener had besides the Silberman type machines, also another type of machine which functionally was the same as the Silberman, but it didn't perform identically in that it did not have two stringers produced. It was what we call a single-header machine. But functionally it operated the same as the Silberman type machine" [R. 802-803].

Defendant's witness Borson testified that these operated in production at 1200-1300 rpm [R. 984] thus forming and applying 1200 to 1300 zipper elements during each minute of operation. Thus we establish that machines

“identical” to the Silberman Patent were built and functioned as stated.

It would appear then that, unless anticipated, the Silberman Patent is valid. The District Court gives us no help as to why it found it invalid. As shown above, it is not an aggregation.

It is entitled to the presumption of validity which is strengthened by the fact that nearly every patent cited by the defendant here was considered by the Patent Office.

Great Lakes Equipment Co. v. Fluid Systems, Inc.
(C. A. 6), 217 F. 2d 613;

Lewet Corp. v. Health-Mor, Inc. (C. A. 7), 181 F.
2d 855;

Modern Products Supply Co. v. Dranchenberg (C.
A. 6), 132 F. 2d 203.

It has enjoyed commercial success both here and abroad.

Plaintiff paid Silberman \$75,000.00 to acquire it [R. 470] which shows what plaintiff thought of it before it acquired it.

Imperial Chemical Industries of England paid Silberman around \$600,000.00 for the European rights [R. 463, Ex. 9] and Companhia Brasileira also paid an additional sum for the South American rights acquired by it [Ex. 10, R. 463-464].

And finally, as will be made clear hereinafter under “Infringement,” defendant has slavishly copied it, using the services of Waldman, Silberman’s die maker in the process [R. 1386-1387, 1046-1047, Ex. 18].

Such copying has been commented upon by this Court in *The Filtext Corporation v. Atiyeh*, 216 F. 2d 433 at

445, wherein it cited the case of *Kurts v. Belle Hat Lining Co.*, 280 Fed. 277 at 281, for the following:

“The imitation of a thing patented by a defendant, who denies invention has often been regarded, perhaps especially in this Circuit, as conclusive evidence of what the defendant thinks of the patent, and persuasive of what the rest of the world ought to think.”

Accordingly, the Silberman Patent is *prima facie* valid.

The Silberman Patent Is Not Anticipated and Involves Invention Over the Prior Art.

At the outset, we note that the District Court did not enter a *finding of fact* that the Silberman Patent was anticipated or does not involve invention over the prior art.

Conclusion of Law II [R. 189] appears to relate to the matter of aggregation versus combination only, which has been dealt with above. Thus, other than the *Havekost* matter, *infra*, this Court does not have the benefit of any *finding of fact* as to the presence or lack of invention in the Silberman Patent. However, we shall demonstrate validity.

The patent to Poux '017, due to our acquiescence in the holding that it is inoperable, is no longer available to the defendant as a reference. Finding VIII [R. 175] says:

“Poux '017 did not solve a problem but its disclosure merely stated a problem and a desirable end result. He stated in his patent that it would be desirable to overcome the problem of handling preformed zipper elements by keeping them attached to the strip of stock and not completely severing them until they were attached to the tape. In substance, his claimed method so stated, but he did not teach a workable manner or means of accomplishment of the desired result.”

It is well settled that an inoperative disclosure cannot thus be used.

General Electric Supply Corp. v. Maytag Co. (C. A. 8), 100 F. 2d 218, 222;

Williams Iron Works v. Hughes Tool Co. (C. A. 10), 109 F. 2d 500, 510;

Topliff v. Topliff, 145 U. S. 156;

Bourns v. Edcliff Instruments (D. C. Cal.), 125 Fed. Supp. 503;

Alexander Anderson, Inc. v. Eastman (D. C. Cal.), 16 Fed. Supp. 513.

Defendant has cited:

Sundback	No. 1,331,884
Sundback	1,947,956
Smith	1,533,352
Johnson	1,731,667
Hommel	1,659,266
Binns	2,026,413
Taberlet	2,294,253
Wintritz	2,201,068
Sundback	1,467,015
Murphy	1,664,880
Silberman	2,437,793
Sundback	1,434,857
Wintriss	2,336,662
Ulrich	2,370,380
Poux	2,169,176
Behrens	2,267,783
Legat	2,116,726
Ulrich	2,302,075
Ulrich	2,338,884
Prentice	2,116,712

Defendant did not put on a witness to discuss any of these patents; no application of any of them to Silberman's claims or his new functional relationship was made in either the District Court's Opinion or in the Findings and Conclusions.

Thus, we do not have a clearcut understanding of just what defendant contends is the pertinency of the various patents relied upon to challenge the validity of Silberman's claims.

Certainly, no single patent anticipates Silberman and the multiplicity of patents cited, both by the Patent Office and by defendant, "is evidence of the weakness of the contention" that Silberman is invalid.

Reynolds v. Whitin Mach. Works (C. A. 4), 167
F. 2d 78, 83.

Defendant has placed some stress on Sundback No. 1,331,884, Exhibit E [R. 1723, *et seq.*]. Reference to figure 19 of this patent shows that Sundback contemplates a strip 1 from which by means of a punch 22 he punches out an element which is then pressed back into the strip 1, page 2 (lines 41-48). From then on nothing restrains the punched out element except the thin sides of the strip 1. We can well imagine what would happen if this were done at the rate of 1200-2000 times per minute! Furthermore, Sundback proposes to clamp the legs of the elements about the tape by engaging the side strips of metal scrap between which the separated fastener elements have been returned by jaws 46 (Fig. 19). Again, we can well imagine what this would do to the rest of the strip and the loose elements carried by it! And note that his jaws do not, as called for by Silberman "engage the element."

His closing step is thus separated from his severing step and thus he does not have the element retained in a vise-like grip during *severing and attaching*. His jaws 46 are thus not “immediately at the position of the separating means” and the new functional relationship of Silberman is not obtained.

The first part of Finding VII [R. 174] says:

“At the time of Poux '017, there were machines in use which formed the individual zipper elements and other machines which attached them to the cloth tape. This necessitated costly and precise handling of the individual and separate zipper elements and it was difficult to properly set them on the tapes.
* * * ”

The above quoted part of Finding VII applies to most of the prior art patents here relied upon by defendant.

Defendant also relies on Sundback No. 1,947,956 [Ex. F, R. 1743], a file wrapper reference. It should suffice to dispose of this patent to state that separate elements 1 are punched out of the strip 7 which are then transported to another place where they are clamped to the tape. They do not remain part of the strip until they are mounted on the fabric tape. Severing of the fastener elements and attaching to the tape are widely separated in time and space.

Smith No. 1,533,352 [Ex. G, R. 1759] relates to a method of making paper box fasteners. Even if we assume that it is in an art analogous to Silberman, which we deny, it is not pertinent here because the fastener is severed completely (see Fig. 3) before it is attached to anything.

Johnson No. 1,731,667 [Ex. H, R. 1764] preforms a group of elements strung together (Fig. 6) in “any suitable machine” (p. 1, 1. 71), attaches them all to a tape and then cuts them apart. It is completely irrelevant to Silberman.

Hommel No. 1,659,266 [Ex. I, R. 1769] relates to a method of making wire fasteners. It does not involve the use of a tape and obviously does not retain an element in a vise-like grip as it is attached to a tape. It is completely irrelevant to Silberman.

Binns No. 2,026,413 [Ex. J, R. 1781] likewise forms separate elements which are transported to a remote station for attaching to a tape. It requires two separate machines.

Taberlet No. 2,294,253 [Ex. K, R. 1835], a file wrapper reference, likewise forms separate elements which are transported to a remote station for attaching. Again, severing and attaching are widely separated in time and space.

Wintritz No. 2,201,068 [Ex. L, R. 1842], a file wrapper reference, employs two machines, one a rolling mill for forming what he calls an embryo “element wire” in which the elements are formed and the other a severing and attaching machine. It is in nowise pertinent.

Sundback No. 1,467,015 [Ex. 13, R. 1689] uses wire that is rolled to a “Y” shape from which slices are cut, transferred to a die to form heads and recesses and then transferred to a third stage for attachment to a tape. It is the old Talon process and involves substantially none of Silberman’s features.

Murphy No. 1,664,480 [Ex. M, R. 1867] is merely a punch press for making primer anvils and wholly irrelevant. Nothing is attached to a tape.

Sundback No. 1,434,857 [Ex. BF, R. 1883] is the same and subject to the same comments as Sundback No. 1,331,884 [Ex. E, *supra*. See Fig. 26].

Wintriss No. 2,336,662 [Ex. BG, R. 1906] is by the same inventor as Exhibit L and likewise operates on a long string of "embryo elements" previously formed in another machine. It is again not pertinent. It also was a file wrapper reference.

Ulrich No. 2,370,380 [Ex. BH, R. 1917], a file wrapper reference. Ulrich like Wintriss is a Conmar patent and again uses a rolling mill to form a wire of pre-formed "embryo elements" which are severed and attached to a tape in a separate machine. It is no more pertinent than Exhibits L or BG.

Poux No. 2,169,176 [Ex. BI, R. 1934] is a method patent and does not show a ram. Obviously then, it does not show a ram having the new functional relations of Silberman. It involves forming a long string of pre-formed elements.

Behrens No. 2,267,783 [Ex. BJ, R. 1947] was a file wrapper reference. It relates to a totally different type of zipper and had this patent been offered in evidence during the trial, plaintiff would have demonstrated its inoperability. This inoperability arises as follows: Either punch 86 severs the end element before member 93 crimps jaw J upon bead B of the tape or it does not (see Figs. 15 and 16). If it does, then the element is completely loose, uncontrolled and almost anything might happen.

If it does not, then there is nothing backing up the element as an anvil against which member 93 can clamp the jaw J. Thus, closing would be impossible.

Legat No. 2,116,726 [Ex. BT, R. 1969] was a file wrapper reference. This patent shows a method of making fastener units in which a plurality of fastener elements are cut from a strip. It does not show any means or process for attaching the elements to the tape and in fact it states on page 3 of the Specification, column 1, lines 5-9, the following: "Having prepared the units U, these units may be secured to the beaded edge of the stringer by any suitable mechanism such as has commonly been used in this art for uniting *independent* units to stringer tapes" (emphasis supplied). Thus Legat totally fails to show the basic concept of using a single ram for performing all of the steps for forming, severing and attaching a slide fastener element to a tape, and certainly fails to disclose the concept of having the element held in a vise-like grip integrally attached to the strip during the steps of forming, severing and clamping to the tape. These basic concepts of Silberman being thus omitted from the alleged anticipation, it is clear that Legat in nowise negatives the novelty of the Silberman claims. No contention can possibly be made that Legat would infringe Silberman, were it subsequent thereto. By the simplest of logic, it is therefore apparent that Legat cannot anticipate the claims of Silberman.

Ulrich No. 2,302,075 [Ex. BU, R. 1976] was a file wrapper reference. This patent discloses a method in which the elements are completely severed from the strip before attachment to the tape (see Figs. 7 and 8). Thus, the salient feature of Silberman is absent.

Ulrich No. 2,338,884 [Ex. BV, R. 1988] was misrepresented to the Court and counsel as having been cited in the Silberman file wrapper [R. 1161], and hence objection was withdrawn [R. 1166-1168.] But the objection made as to this patent, based on lack of notice under 35 U. S. C., Section 282(4), was good and should have been sustained. However, it again discloses a process using a wire 14 of joined preformed embryo elements made in a rolling mill and adds nothing to the other Conmar patents above discussed [Exs. L, BG and BH].

Finally, defendant cited Prentice No. 2,116,712 [Ex. BW, R. 1999], another file wrapper reference. This is merely a patent for forming a separate, loose zipper element which is later independently attached to a tape. It is obviously irrelevant.

It is significant with respect to these last four patents [Exs. BT, BU, BV and BW] that they were not offered in evidence during the trial. After the District Court had decided this case, it ordered the case reopened to receive these patents in evidence [R. 153].

Now something peculiar occurred here. Ulrich No. 2,338,884 [Ex. BV] had not been offered in evidence or in any way referred to in this case, either in the pleadings, interrogatories or in the evidence. It was not before the Court, at least to plaintiff's knowledge. How then, we may ask, did the District Court determine, as it did on July 17, 1956, that this patent was pertinent and admissible. *Officially it had never even seen it.*

From the foregoing review of the prior art relied upon by the defendant, it becomes obvious that the state-

ment made *supra*, page 33, that Silberman discloses a combination having a new and different function and a new cooperative relationship of the ram, forming and severing tools and closing jaws by which the element is held in a vise-like grip until completely attached to the tape, remains valid.

The best that defendant can do is find one element of Silberman here and another there and attempt to synthesize Silberman. This is not proper where, as here, we have a true combination.

Accordingly, Silberman is not anticipated and involves invention over the prior art.

Silberman Is the Sole Inventor of Patent No. 2,437,793.

The District Court has entered a finding [XXVI, R. 182] to the effect that Silberman was not the sole inventor and his invention was at least in part the work of one Havekost. On this is based Conclusion of Law V [R. 189]. These are manifestly erroneous.

This entire defense is based upon a deposition of Havekost [Ex. AM, R. 1478-1514], and this Court is as competent as the District Court to evaluate such evidence.

Indeed, the District Court indicated it would enter a finding overruling the Havekost defense. Thus at R. 1134, the District Court said:

“I am going to make a finding that this talk about Havekost inventing this machine is out the window. And I think you might argue that if you want to in your briefs.” [R. 1134.]

And, again, at R. 1145-1146, the District Court said:

“I am inclined to find, and this is one on which there can't be very much dispute, that Havekost did not invent, if anyone invented, the Silberman patent '793.

“The machine that Havekost talks about is one that used preformed strips, and therefore if there was such a machine, it was something that considered the older type of way of making zippers.”
[R. 1145-1146.]

That the District Court was right in its initial appraisal of the Havekost defense is apparent from a reading of the cross-examination of Havekost. He completely disclaimed inventing the Silberman machine. Thus, he testified:

“Q. During your other testimony, you identified many drawings in connection with the patent with which you had no corresponding parts in your own machine, did you not? A. I might have, yes.

Q. So there are many differences between your machine and the Silberman machine? A. I would say so.

Q. And the only similarities that you have talked about are in the application of the so-called internal combustion engine piston and crank arrangement in your machine that you also noticed in the Silberman machine, isn't that correct? A. Right.”
[R. 1508-1509.]

And again:

“Q. So that the only function of any of these six machines was to cut off, to shear off the zipper element and attach it to the tape? A. Yes.

“Q. In the industry, that was pretty much known as the Conmar type machine, was it not? A. Correct.” [R. 1510.]

Furthermore, the burden of proof was clearly upon the defendant to prove this defense with clear and convincing evidence, sometimes said to require proof beyond a reasonable doubt. The machines which Havekost designed are in existence [R. 1512] and could have been produced by defendant to prove exactly what he designed. Failure to produce this incomparably better evidence raises a presumption that it would not have supported defendant’s claim.

Surely a court should not strike down a patent on the mere oral testimony of a witness unsupported by documentary evidence, even if he claimed to be an inventor, *a fortiori*, it should not, where, as here, he disclaims it.

Thus, against all avenues of attack, the Silberman Patent remains valid.

Defendant Has No License Under the Silberman Patent.

The District Court has entered a Finding XXII and Conclusions III and IV as follows:

“XXII.

“Silberman entered into a verbal license agreement with defendant and subsequent actions of defendant, including expansion of defendant’s facilities for manufacturing zippers were made in reliance upon that license.” [R. 181-182.]

* * * * *

“III.

“The understanding between Silberman and defendant on or about August 15, 1948, was relied upon by defendant which changed its position in reliance thereon and defendant was therefore licensed under Silberman ’793.

“IV.

“Plaintiff purchased Silberman ’793 subject to the existing licenses from Silberman to defendant and was estopped from thereafter withdrawing the license or charging that the defendant infringed.” [R. 189.]

These are again manifestly erroneous, and the District Court again once so decided.

This defense is based upon a purported conversation in the Roosevelt Hotel in Hollywood in August of 1948 between Silberman, Sigmund Loew (then president of defendant) and Lipson. The Court finds, in effect, that Silberman granted a license by saying to defendant that he would not sue them as long as they refrained from disturbing his operations in Europe.

Two witnesses only testified as to this conversation, *both called by defendant*. Loew, defendant’s president at the time of this meeting, testified by deposition and unequivocally stated that no agreement was made. Thus, he testified:

“Q. By Mr. Graham: Did you say anything to him about whether or not you would sell any machines in Europe? A. No arrangement was made whatsoever. He said that he was going to buy a number of machines we had at that time which we couldn’t use ourselves in the plant at that time, which we made, that he is going to buy or sell them for us so we will not interfere. He called us once long distance to that effect from New York, and it

died a natural death. We didn't do any more about it." [R. 1400-1401.]

* * * * *

"Q. By Mr. Lyon: At that meeting did you reach an understanding, a firm understanding with Mr. Silberman, as to what you were to do and what he was to do in the future with respect to slide fastener machines?

Mr. Graham: I wish to make the same objection.

The Witness: No, we hadn't had an understanding at that time." [R. 1417-1418.]

* * * * *

"Q. By Mr. Lyon: In response to that statement of Mr. Silberman in April of 1948 wherein he stated, according to your letter of February 4, 1952, to Mr. Lipson, that he knew his patent wouldn't hold water and that he wouldn't enforce it against you if you stayed out of Europe, did you respond to that statement in any manner agreeing to such terms. A. No, we hadn't had any agreement whatsoever at that time.

Q. Did you consider yourself bound to Mr. Silberman to refrain from selling machines in Europe? A. No." [R. 1425-1426.]

The other witness Lipson not only agreed to this but testified that he made a counter proposal which was not accepted. Thus, Lipson proposed a deal involving Silberman selling 10 machines in which Union had tied up \$25,000.00 [R. 875-876], and as far as accepting Silberman's offer "I was for it and Mr. Loew was against it." [R. 878]; Loew was then president of defendant. Lipson was not even an officer [R. 884]. In

any event Lipson (and defendant) continued efforts to sell machines in Europe [R. 881, 890-891].

The District Court recognized this in saying:

“* * * However, even from his testimony it is obvious that no agreement was entered into between Silberman and Union Slide, Lipson or Loew. There was no acceptance of this agreement. There was an offer made by Silberman. There was no acceptance made. So the agreement never came into force, and I would be inclined to find that there is no estoppel, that there was no real reliance on what Silberman had to say.” [R. 1141.]

Why it later reversed itself remains a mystery.

The Plaintiff Is Not Estopped to Enforce Its Patent Rights.

The District Court has held that plaintiff is estopped to enforce its rights because Lipson overheard an alleged statement by Mr. McKee, a vice-president of plaintiff, to Loew upon a visit to defendant's plant, that no patents then owned by plaintiff were infringed [R. 165, Finding XXIII, R. 182, and Conclusion VII, R. 189-190].

Here again the Court is clearly erroneous and at one time so agreed.

Again, there were only two witnesses to this alleged event, both called by defendant, Loew and Lipson.

Loew simply testified that no such statement as that attributed to McKee was made. Thus, he testified:

“Q. * * * Did you talk about infringement when Mr. McKee was there? A. No.

Q. He made no statement of any kind to you regarding infringement? A. No.” [R. 1412.]

Lipson contradicts Loew, but even he admits that he would have expanded his business even if McKee had told him they did infringe. Thus, he testified:

“The Court: And isn’t it logical you would have gone ahead and continued the business and expanded even though he told you you did infringe?”

The Witness: That is correct.

The Court: All right.” [R. 907.]

The District Court, with the evidence freshly in mind, stated:

“Now, I am inclined to believe Mr. Lipson that McKee said the things that he is reputed to have said. But I find no estoppel, find no reliance upon McKee’s statement constituting any change of position. And this, again, goes back to what I consider the honesty of Mr. Lipson, and that is in response to the court’s question he admitted that those expenditures that were made would have been made anyhow whether McKee made that statement or not.” [R. 1141.]

Again, in view of the record, we are at loss to explain why the District Court reversed itself on this ground. It seems apparent that not only is defendant bound by the testimony of its own witness, Loew, but assuming the statement was made, there was not only no right to rely on it but no actual reliance, and the holding of the court in this regard is clearly erroneous.

Furthermore, the alleged estoppel based upon McKee’s alleged statement can in any case have no effect upon the Silberman Patent, as the plaintiff was not the owner of the Silberman Patent at the time of Mr. McKee’s visit to the Union Slide Fastener plant. The agreed date of

Mr. McKee's visit was April 15, 1948 [R. 1411]. Plaintiff acquired title to the Silberman Patent April 18, 1949, or more than a year later [Ex. 8].

Infringement.

Infringement of Claims 1-4, 13, 32-40 of the Silberman Patent is established beyond question. In fact there has been slavish copying, and Mr. Loew, who built Union's first machines, hired Murray Waldman, Silberman's die maker, to help him [R. 1386-1387, 934-937]. Murray Waldman worked for Silberman while Silberman was making the machine shown in the patent in suit [R. 1046-1047].

As Appendix II to this brief, there is reproduced Plaintiff's Exhibit 4. In this exhibit, each element of claim 40 of the Silberman Patent is found in defendant's structure, but the striking thing is the degree of identity of parts. Every punch, every die, every closing jaw of Silberman is present in the accused structure in substantially identical form and place and performing the identical function.

Plaintiff's expert, Mr. Doble, explained with reference to photographs of the accused structures, [Exs. 13-A to 13-L], exactly wherein there existed every element of the Silberman invention [R. 297-318]. His testimony is summarized in the following, which is uncontradicted:

"The Witness: I would also like to call attention to the similarity in the shape of the housing, the ram, the guide for the ram, the tape feed, the wire feed, the punches—in other words the entire structure bears a very close similiarity, if not an identity, to the structure of the Silberman patent, plaintiff's Exhibit 3 in suit." [R. 315.]

In fact, when pressed by the Court as to whether defendant claimed non-infringement, Mr. Mockabee candidly stated: "Our principal defense with regard to the Silberman patent is invalidity." [R. 320.]

A reading of Claim 40 on the accused device applies as well to Claims 13, 32-36 and 39. As to Claims 1-4, 37 and 38, Mr. Doble applied these claims to the accused device as well [R. 322-326].

We do not understand that defendant denies that the claims of Silberman in suit can thus be applied to the accused devices, and the Court apparently agreed. Thus at R. 340, the Court observed:

"* * * But it doesn't look to me from what I have seen so far and from these drawings and exhibits that infringement is an issue in this case." [R. 340.]

"Mr. Mockabee: There are some questions of infringement with regard to claims 1 through 4 of Poux" [R. 341].

He made no reply as to Silberman.

Now, concededly, defendant has added to the Silberman disclosure. It has added grooves in the upper die block and cooperating V-shaped punches on the base so as to convert from round headed elements to square elements and the lip on the closing jaw and a vacuum device to remove chips. But these do not change the operation of the device in any way or subtract from the accused devices any of the elements patented by Silberman.

It is probably the presence in the accused devices of these additional improvements that led the District Court to find non-infringement, but that is manifestly erroneous.

As stated by this Court in *Stebler v. Riverside Heights Orange Growers' Ass'n*, 205 Fed. 735, 739, cert. den. 231 U. S. 748:

“One who appropriates another’s patented invention, even though he may add thereto another element to perform an additional function, is guilty of infringement.”

That case in turn refers to *Cimiotti Unhairing Co. v. American Unhairing Mach. Co.*, 115 Fed. 498, 504 (2 Cir.), which held:

“The mere fact that there is an addition or the mere fact that there is an omission, does not enable you to take the substance of the plaintiff’s patent. The question is, not whether the addition is material, or whether the omission is material, but whether what has been taken is the substance of the invention.”

See also:

Elizabeth v. Pavement Co., 97 U. S. 126 at 137.

We have noted above that the Court in its final decision reversed its position on the Havekost defense, on oral license from Silberman and on estoppel based on McKee’s visit. We can only conclude that its similar reversal on infringement was to present plaintiff with a case wherein it lost on all the issues. At the end of this case, the District Court took over, reopened the case on its own motion [R. 1160-1161] despite plaintiff’s objection and without a request from defendant.

Subsequently, the District Court has twice warned defendant that this case can be reversed [R. 1305-1306, 1329-1330].

Frankly, we believe that it is so obvious that the Court was in error in each case where it reversed its earlier tentative conclusion as to raise an inference that somewhere along the way the District Court got completely off the track and that on this appeal justice demands a complete reversal.

Plaintiff Stole Nothing From Defendant.

Conclusion XI [R. 191] that plaintiff utilized its inspection of defendant's machinery in order to gain from defendant numerous improvements incorporated in plaintiff's machines, and the findings XII [R. 177] and XXXXVI [R. 187] are erroneous, have no support in the record, and should be reversed. The specific items listed in finding XII [R. 177], are the ones found to have been taken from defendant by plaintiff without adequate compensation.

McKee spent about one-half hour going through defendant's plant on April 15, 1948 [R. 1411], and then returned to the office. Lipson had remained in the office [R. 901]. There is no evidence that any of these improvements were shown to McKee or any one else connected with plaintiff. There is no claim of novelty in any of these improvements [R. 741].

Lipson made each of his specified improvements between March 3, 1949 and the end of August 1949 [R. 956-957], after Loew left the company March 21, 1949 [R. 810]. This was a year after McKee's visit. Plaintiff could not have learned of them from this earlier inspection in 1948.

At the interview between Silberman, Loew and Lipson at the Hollywood-Roosevelt Hotel in August of 1948,

Silberman accused Loew of bribing one of his employees (Murray Waldman) to disclose matters he was not supposed to disclose [R. 874] and Loew “. . . evidently felt guilty of something that he did . . .” [R. 878]. Prior to severing connections with Union and long prior to McKee’s visit in 1948, Loew hired Murray Waldman to make his machine work [R. 1387], knowing that Waldman had previously been employed by Silberman in building the machine of the patent in suit [R. 935-937, 1046-1047, Ex. 18]. Waldman was again employed by defendant from August 1950 until 1954 [R. 234]. Samuel Borson, from Triple Tool & Die Co. in Detroit had worked on plaintiff’s zipper machine tools. He was hired by defendant in April, 1952 and has remained in its employ [R. 892]. He had previously built a chain machine for California Slide Fastener Company [R. 892]. In view of this evidence how can a court of justice find that plaintiff acquired these things from defendant?

It is far more logical to presume that Waldman and Borson disclosed to defendant the improvements made by Silberman and plaintiff in the Silberman patented machine than to surmise that, merely because similar improvements not shown in the patent in suit were used in machines of both plaintiff and defendant, they originated with defendant.

The origin of defendant’s improvements was most uncertain because many of defendant’s drawings relating to the improvements made in defendant’s machine were lost during the two fires of undetermined origin at defendant’s plant on October 2, 1949 and February 15, 1954 [R. 955].

It is a sad commentary that a patent owner can be branded with unclean hands and be “guilty of bad faith amounting to fraud” merely because an infringer, who patterned his machine from machines used by a licensee under the patent (California Slide Fastener Company) and hired a tool maker (Waldman) who had helped construct and develop the patented machine, and another tool maker who had worked on plaintiff’s tools (Borson), shows that a few improvements made after the patent application was filed, appear both in the infringing machine and in the patent owner’s machine.

If there were any theft of any of these ideas from defendant, the burden was on the defendant to at least show some possible connection. That has not been done here.

A more detailed investigation of each of the items allegedly stolen by Talon shows even more conclusively that Talon did not appropriate these items from Union as a result of McKee’s half-hour visit in 1948.

The particular items found to have been taken by plaintiff from defendant are listed under finding XII [R. 17708] and are discussed here under the same reference letters as used in the finding. The facts regarding these items are:

**(a) The Spring Leaves Used in Plaintiff’s Exhibit 5
Machine to Carry the Ram.**

Plaintiff’s Exhibit 5, using the spring leaf supports for the ram, came just prior to plaintiff’s negotiation with Silberman for the second agreement, Exhibit 8, executed March 8, 1949. It was a main reason for making that agreement [R. 548, 556]. It was a Silberman development [R. 1041].

Defendant never used any such construction. It used the ram with the "V"-shaped ends as shown in the patent in suit for carrying the punch block. Lipson testified regarding Exhibit AP that has the "V"-shaped ram ends:

" . . . this is a punch block holder which we are using now" [R. 727].

Defendant's accused machine, Exhibit AZ, uses the "V"-shaped ram ends shown in the Silberman patent in suit. There is no evidence that anyone connected with defendant ever knew of the leaf spring mounting of the ram until after plaintiff's Exhibit 5 machine was produced. Lipson could have described this mounting better ". . . if you have hours to take it apart and see it function" [R. 822].

(b) The Lip on the Closing Jaw for Clamping the Zipper Elements on the Tape.

Lipson developed this improvement in 1949 [R. 749] long after McKee's half-hour trip through defendant's plant. Even after Lipson had examined plaintiff's Exhibit 5 machine and knew what he was looking for, he was not sure that this idea was used in the machine [R. 744]. How could it be noticed on casual inspection of the machine? A similar lip on a closing jaw 49 is shown in Figs. 9, 10, 11 and 12, Talberlet patent 2,294,253 [R. 1838]. Plaintiff used similar lips 74 on closing jaws 67 in its production machine shown in Sundback Patent 1,467,015 Fig. 15, sheet 7 of drawings [R. 482 and 1696]. Each applies individual elements but the principle is the same.

(c) An Ejector Die on the Cut Off Punch to Prevent Zipper Elements Bunching Up.

Lipson made this improvement in May or June 1949 [R. 834]. This again was long after McKee's visit. The ejector was fifteen-thousandths of an inch long [R. 832]. Could anyone observe a thing this small on a one-half hour trip through an operating plant? We think not. There is no evidence that it was ever explained to or shown to McKee.

(d) No "V"-Shaped Ram as in the Silberman Patent.

Defendant uses the "V"-shaped ram ends on its punch holder Exhibit AP [R. 727 and 820] from the accused machine [Ex. AZ]. Defendant's ram was redesigned in 1949 [R. 728] to use different metals for the ram and gibs but defendant continued to use the form of ram with V-shaped ends shown in the Silberman patent in suit. Plaintiff uses the spring leaf support for its ram (see item (a) above). How could plaintiff learn *not* to use a "V"-shaped ram from defendant that used such a ram?

(e) A Device for Providing Spacing Between Sets of Zipper Elements.

About August 1947, Lipson saw an electronic gap spacing device on the Silberman machines used by California Slide Fastener Company [R. 751] and adopted it for defendant's machines [R. 754]. He examined the spacing device used on plaintiff's Exhibit 5 machine and testified:

"There is a company who builds those and we have the same thing installed in our exhibit here" [R. 754].

Silberman '793 describes a gap spacing device used in his machine in line 73 column 16 through line 19 of column 17 [R. 1664].

(f) The Vacuum or Suction Device for Removing Metal Chips.

So far as Lipson knew, this "might have originated 300 years ago" [R. 823]. He had not previously seen a vacuum collector used on a zipper machine [R. 826]. For that matter he never saw a zipper machine until 1947 and knew nothing about such machines [R. 710]. Vacuum and pressure collectors of this kind have long been used on zipper and other machines for removing metal chips. A pressure-operated chip collector is shown in Fig. 23 [R. 1923] of Ulrich patent 2,370,380 and described on page 4 of that patent, second column, lines 8-33 [R. 1927].

There is a complete absence of any evidence supporting either finding XII [R. 177] or finding XXXXVI [R. 187]. There is no evidence from which conclusion XI [R. 191] may reasonably be derived. Each of these findings and the conclusion should be reversed as not supported by any evidence in this record and as contrary to all of the relevant evidence.

Unclean Hands and the Antitrust Laws.

The Controlling Law.

The District Court found unclean hands and misuse in Talon's quota license agreements when coupled with an intent and attempt to monopolize a substantial part of the zipper market in violation of Section 2 of the Sherman Act. Since there is no finding that the license agreements

by themselves constitute misuse, the case turns on the question of intent and an attempt to monopolize. It is at this point that the District Court committed legal error.

This Court stated the controlling law very clearly in the case of *Cutter Laboratories v. Lypophile-Cryochem Corp.*, 179 F. 2d 80, thus:

“Patent pools and cross-licensing agreements, when formed in a legitimate manner for legitimate purposes, are not illegal in themselves. *Standard Oil Co. v. United States*, 283 U. S. 163, 51 S. Ct. 421, 75 L. Ed. 926. Nor is an agreement to assign patents on future inventions within a specified field inherently illegal. *Transparent Wrap Machine Corp. v. Stokes & Smith Co.*, 329 U. S. 637, 67 S. Ct. 610, 91 L. Ed. 563. *It is only where the agreements are used to effect a restraint of trade or a monopoly that they violate the law*, as where they are used to fix prices, *United States v. Line Material Co.*, 333 U. S. 287, 68 S. Ct. 550, 92 L. Ed. 701, or to suppress competition from unpatented articles, *Morton Salt Co. v. Suppiger Co.*, 314 U. S. 488, 62 S. Ct. 402, 86 L. Ed. 363, or to monopolize an entire industry by pooling the dominating patents and allocating fields of manufacture among companies which would otherwise be in competition. *Hartford-Empire Co. v. United States*, 323 U. S. 386, 65 S. Ct. 373, 89 L. Ed. 322.” (P. 92; emphasis added.)

* * * * *

“But conceding the patent pool did place in the hands of the parties a power to exclude competition from the industry by fixing prices or charging unreasonable royalties or other methods, that power by itself could not constitute unlawful monopolization *unless accompanied by a purpose or intent to exclude*

competition. United States v. Griffith, 334 U. S. 100, 68 S. Ct. 941, 92 L. Ed. 1236; American Tobacco Co. v. United States, 328 U. S. 781, 809, 814, 66 S. Ct. 1125, 90 L. Ed. 1575.” (Pp. 93-94; emphasis added.)

The District Court was very much aware of the *Cutter Laboratories* case and cited it in its Opinion [R. 150].

Attempt to Monopolize Defined.

In *American Tobacco Co. v. United States*, 328 U. S. 781, the Supreme Court said:

“The phrase ‘attempt to monopolize’ means the employment of methods, means and practices which would, if successful, accomplish monopolization, and which, though falling short, nevertheless approach so close as to create a dangerous probability of it, which methods, means and practices are so employed by the members of and pursuant to a combination or conspiracy formed for the purpose of such accomplishment.” (P. 785.)

The Supreme Court further defined the term in *United States v. Griffith*, 334 U. S. 100, when it said:

“It is, however, not always necessary to find a specific intent to restrain trade or to build a monopoly in order to find that the anti-trust laws have been violated. It is sufficient that a restraint of trade or monopoly results as the consequence of a defendant’s conduct or business arrangements. United States v. Patten, 226 U. S. 525, 543, 57 L. ed. 333, 341, 33 S. Ct. 141, 44 L. R. A. NS 325; United States v. Masonite Corp., 316 U. S. 265, 275, 86 L. ed. 1461, 1473, 62 S. Ct. 1070. To require a greater showing would cripple the Act. As stated in *United States v. Aluminum Co. of America* (CCA

2d NY) 148 F. 2d 416, 432, 'no monopolist monopolizes unconscious of what he is doing.' *Specific intent in the sense in which the common law used the term is necessary only where the acts fall short of the results condemned by the Act.* The classical statement is that of Mr. Justice Holmes speaking for the Court in *Swift & Co. v. United States*, 196 U. S. 375, 396, 49 L. ed. 518, 524, 25 S. Ct. 276:

“Where acts are not sufficient in themselves to produce a result which the law seeks to prevent—for instance the monopoly—but require further acts in addition to the mere forces of nature to bring that result to pass, an intent to bring it to pass is necessary in order to produce a dangerous probability that it will happen. *Com. v. Peaslee*, 177 Mass. 267, 272, 59 N. E. 55. But when that intent and the consequent dangerous probability exist, this statute, like many others and like the common law in some cases, directs itself against that dangerous probability as well as against the completed result.” (Pp. 105-106; emphasis added.)

The Supreme Court clearly recognized two situations, the first in which a monopoly is found to exist and an intent to monopolize can be presumed and the second in which no monopoly is found and a specific intent to monopolize must be proven. In this case no monopoly was found to exist and the second situation applies. A specific intent and attempt to monopolize must be proven. The District Court erred in presuming an intent from the scanty evidence before it and not recognizing that an intent must be proven.

Evidence Before the Court.

The evidence before the Court shows that Talon, starting with a legitimate patent monopoly in the early thirties, has followed a policy which has consistently opened up the market. Prior to World War II, Talon had 60% of the zipper market [Finding XXVII, R. 182] but subsequent to World War II, it had only 30% [Finding XXIX, R. 183]. It licensed its patents freely and without any attempt to suppress competition even though it had a strong patent position, many of its patents having been sustained in pre-World War II actions.

American Agreement.

The American Agreement is dated June 1, 1934, and expired by limitation on May 31, 1944 [Ex. AH, par. 19]. American was relieved of the obligation to pay royalties thereunder by a letter agreement dated July 7, 1938 [Ex. AH-2] and the agreement continued royalty-free on a year-to-year basis.

Presumably the Court had paragraph 7 in mind when it found the agreement "clearly illegal." Paragraph 7 provided that the licensee Sterling could not sell slide fasteners manufactured under the agreement at prices which were lower or more favorable than Talon's prices. Since Talon's patent on the zipper itself was contested on its merits and found valid and infringed, the legality of this provision is without question in view of *United States v. General Electric Co.*, 272 U. S. 476, and *United States v. Line Material Co.*, 333 U. S. 287. This provision shows only an intent to prevent the licensee from selling a particular patented form of zipper, a specimen

of which was appended to the agreement, at a price that was lower than the licensor's price.

There is nothing in the American agreement which supports an intention to monopolize the slide fastener industry.

Los Angeles Conference.

The Los Angeles conference proved nothing. No officers of Talon were present and the conference had no official sanction or status. The conference was merely an informal meeting of salesmen at which they aired their mutual grievances. No agreement was reached at the conference. The only positive conclusion which can be derived from the conference is the fact that the zipper business is highly competitive and cannot be dominated by any one party. One witness present at the conference, Isadore O. Napp, said that if necessary he would put a gold nugget in each box of zippers in order to sell them [R. 1476].

There is nothing in the record of the conference which supports an intention on the part of Talon to monopolize the slide fastener industry.

Quota Agreements Not Restrictive.

The quota agreements are not restrictive and no intent to attempt to monopolize the zipper industry can be derived from the quota agreements themselves. The District Court inferred that it was unprofitable for the licensees to exceed their royalty-free quota [Finding XXXIII, R. 185] but simple mathematics points up the error of this inference.

The Conmar license, Exhibit 11, is specifically taken to illustrate the point because it was the only one in which the quota was ever remotely approached and only once exceeded. In 1950 Conmar sold 118,781,000 slide fastener units [R. 692]. Conmar's quota for the year 1950, per Exhibit 11, was 114,500,000 slide fastener units [R. 692] or exceeded its quota by 4,281,000 units, or 3.74%. In accordance with paragraph (e) of Exhibit 11, the royalty for the over-the-quota units was 10% of the aggregate net sales price thereof. A 10% royalty on 3.74% of its total sales becomes the insignificant rate of .374%. There is nothing restrictive or oppressive about this overall royalty rate.

A glance at the quota figures and actual sales for Conmar for the years 1940-1950 [R. 692] further shows the unrealistic basis and error of the Court's conclusion. In the years 1940 to 1949 the closest that Conmar came to its quota was in 1949 when it sold 81,731,000 units against a quota of 102,000,000 units. Conmar's production was about twenty percent (20%) less than its royalty-free quota. If the quota was in any way acting as a restraining force on Conmar's production, it is reasonable to suppose that Conmar would stop production twenty percent (20%) below its quota? Obviously it would stop production at the quota or a bit under it but no licensee did this.

No Distinction Over DuPont Case.

The controlling case is *United States v. E. I. DuPont De Nemours & Co.* (D. C. Del., 1953), 118 Fed. Supp. 41, affirmed on direct appeal by the Supreme Court at 351 U. S. 377. This decision is one hundred and ninety-

two pages long and appellant cannot attempt to digest any more than the relevant portions in this brief.

The United States charged DuPont with monopolizing and attempting to monopolize trade and commerce in cellophane. As partial basis for the charge it pointed to a 1933 agreement between DuPont and Sylvania [Findings of Fact 533-583, pp. 149-159].* While this agreement was a cross-licensing agreement, DuPont held the dominant patent. In the 1933 agreement, DuPont gave Sylvania a license to manufacture and sell moisture-proof cellophane at a basic royalty of 2% of the net selling price [Finding of Fact 545(8), p. 152]. For all sales in excess of 20% of the combined sales of DuPont and Sylvania, an additional royalty was charged amounting to twenty cents per pound or thirty percent (30%) of the net selling price, whichever was greater [Finding of Fact 545(12), p. 152]. Sylvania could not produce cellophane by economical processes outside the scope of the DuPont patents and had no alternative royalty-free production process available to it [Finding of Fact 542, p. 151]. The District Court found that DuPont did not attempt and was not attempting to monopolize [Finding of Fact 646-660, pp. 169-171]. It also found that DuPont had not monopolized [Findings of Fact 687-732, pp. 174-181].

The District Court said:

“There is no decision which I could find after long research, which holds a license agreement such as the one involved here violates the Sherman Act.

*These and subsequent references are to Findings of Fact in the *DuPont* case.

Granting validity and scope of duPont's basic moistureproof patent, it is difficult to show how duPont can be held to have restrained trade by granting a license which permitted another to manufacture lawfully the patented product, when there is no showing that as a result of the agreement duPont's position was in any way enhanced or others who might have desired a license were precluded from entering the field. Cases on which plaintiff relies deal with combinations of patents under circumstances where the cross licensing parties sought to create a position of market control beyond that which either of them was entitled to through the exercise of its own patents. None of the cases affect legality of the grant-back provisions of the Sylvania license under the tests stated by Judge Hand in the Transparent-Wrap case.

“As patentee duPont had right to fix royalties at graduated scales on amount of Sylvania's production. *United States v. General Electric Co.*, 272 U. S. 476, 47 S. Ct. 192, 71 L. Ed. 362; *General Talking Pictures Corp. v. Western Electric Co.*, 305 U. S. 124, 59 S. Ct. 116, 83 L. Ed. 81. No limitation of production by Sylvania under its own patents existed or is charged.

“In its contentions of suppression of competition and assertion of monopoly power, plaintiff fails to come to grips with fact throughout the period that graduated royalties were in effect, Sylvania's entire moistureproof production fell within valid claims of the broad product patent. The record shows Sylvania produced moistureproof cellophane utilizing the patent. It was not required to pay any royalty if it developed types of cellophane not covered by the patent. On these facts, there is no authority to

support the contention it would have been in any way illegal under the Sherman Act for duPont to limit Sylvania's production. The cases are to the effect owner of a valid product patent may by license restrict production of the licensee to a specified quantity at a specified place." (P. 226.)

The District Court below distinguished over the *DuPont* case on the grounds that there was no limitation on production by DuPont's licensee Sylvania under Sylvania's own patents whereas Talon's quota license imposed such a limitation by means of royalty provisions which based the royalty on all products manufactured, whether under Talon patents or patents belonging to the licensee [R. 151, 152]. There is no foundation for this distinction and the quota agreements themselves clearly provide to the contrary. Most of the quota agreements contain a provision identical or similar to paragraph 10 of the Conmar agreement, Exhibit 11, which reads:

"Nothing in this agreement contained shall be construed to obligate licensee to use at any time the method or methods covered by this agreement to the exclusion or disadvantage of any other method available to licensees."

The quota was based on products manufactured under the licensed patents and there is no finding to the contrary and no basis for such a finding in the agreements themselves.

The facts of the subject case are less restrictive than those of the *DuPont* case and do not go beyond the *DuPont* case as the District Court stated. Talon's licenses were royalty-free below the quota and then had above-the-quota royalties of 5% to 15% of net sales price

or less instead of the 30% royalty imposed by DuPont. Talon's licensees were free to manufacture and sell outside the license agreements by using machines and processes which were in the public domain whereas it was not possible to manufacture moistureproof cellophane outside the scope of DuPont's patents.

Chief Judge Leahy's single conclusion of law in the *duPont* case summarizes the situation:

"The facts destroy the charges here made. There has been no monopolization or conspiracy or combination or attempt to monopolize shown. The record reflects not the dead hand of monopoly but rapidly declining prices, expanding production, intense competition stimulated by creative research, the development of new products and uses and other benefits of a free economy. DuPont nor any other American company similarly situated should be punished for its success. Nothing warrants intervention of this court of equity. The complaint should be dismissed." (P. 233.)

Exhibit 7, Cap-Tin License Agreement.

Introduction.

It should first be noted that Talon did not have title to Silberman '793 at any time during the life of the Exhibit 7 agreement and can not be found to have misused a patent which it did not own. The provisions of paragraph 5(a) did not apply to Silberman '793. In the Exhibit 7 agreement, Talon merely took a license from Silberman under Silberman '793. Exhibit 7 was cancelled April 18, 1949, and superseded by the agreement of Exhibit 8, which is the first agreement in which Talon granted a license under Silberman '793.

The District Court found that when the licensee exceeded its quota of production provided for, the Cap-Tin license agreement tied in unpatented with patented art [Finding XXXVIII, R. 185]. The basis for this determination is in the second sentence of paragraph 5(a) of the agreement which reads:

“Cap-Tin agrees that all quantities of fasteners or fastener chain which it may acquire from others and resell, shall be included along with fasteners or fastener chain made by machines licensed herein to Cap-Tin in the computation of the royalties agreed to be paid in this paragraph 5(a) hereof.”

**Exhibit 7 Agreement Confined to Fastener Units
Manufactured Under Licensed Patents.**

On its face, the Cap-Tin agreement is confined to slide fastener units manufactured under the patents licensed therein and there is no illegal extension of the patent monopoly or tie-in. Paragraphs 2(a) and 2(b) carefully define the terms “slide fastener” or “fastener” as used in the agreement to mean units made by a process or machine, or both, covered by a claim or claims of the patents of Talon which are licensed therein. When paragraph 5(a) refers to “all quantities of fasteners or fastener chain” which might be acquired from others and resold by Cap-Tin and which have to be included in computing royalties, the definition of paragraph 2(a) applies and limits the terms to fasteners and fastener chain within the scope of the licensed patents. In other words, if Cap-Tin purchased and resold fastener units from a third party which were made on machines or by methods which infringed Talon’s patents, it had to include them in its royalty computations. That the parties

had this construction of the agreement in mind is confirmed by the last sentence of paragraph 5(a) which voids any implication of license being given to others by the terms of paragraph 5(a). If the sentence requiring that all fastener units be included in royalty computations were intended to be without limitation and broader than the clear definition of paragraph 2(a), there would have been no necessity for the last sentence of paragraph 5(a).

Even as Miscontrued, Exhibit 7 License Not Illegal.

Even when the Cap-Tin license is construed in the way that the District Court construed it, there is no misuse and illegal extension of the patent monopoly. The sale of unpatented materials merely becomes a factor in determining royalties due under the agreement.

Bearing in mind the fact that the license had a large royalty-free quota, the only effect of this construction of paragraph 5(a) is to reduce the royalty-free quota by an amount equal to the quantities of fastener units acquired from others and resold. It is for this reason that the District Court found misuse only "when the license exceeded its quota of production provided for" [Finding XXXVIII, R. 185]. Since Cap-Tin was primarily a manufacturer and not a jobber and did not purchase fastener units for resale to others and since it never exceeded its quota, the questioned sentence of paragraph 5(a) had no practical effect and in no wise allegedly extended the patent monopoly.

While the District Court was not specific in its finding that the provision tied patented to unpatented articles, it must have been reasoning that royalties due on use

of the patented invention were measured in part by sales of unpatented units. There is no misuse in this circumstance.

The Supreme Court conclusively passed on the question in the case of *Automatic Radio Manufacturing Company, Inc. v. Hazeltine Research, Inc.*, 339 U. S. 827. In that case, Hazeltine required its licensees to pay a royalty of approximately one percent of the selling price of radio broadcasting receiver sets sold by the licensees whether the sets utilized the licensed invention or not. Royalties were measured in part by sales of unpatented units. The case went up on a motion for summary judgment and the principal issue was whether this license constituted misuse. The Court sustained the agreement and refused to find misuse. It said:

“That which is condemned as against public policy by the ‘Tie-in’ cases is the extension of the monopoly of the patent to create another monopoly or restraint of competition—a restraint not countenanced by the patent grant. * * * The principle of those cases cannot be contorted to circumscribe the instant situation. This royalty provision does not create another monopoly; it creates no restraint of competition beyond the legitimate grant of the patent.” (Pp. 830-833.)

The District Court confused misuse with a legitimate tie-in between patented and unpatented goods for the purpose of determining royalties due. The Exhibit 7 license agreement does not constitute misuse on the authority of the Hazeltine Research case.

The Court Erred in Awarding Attorneys' Fees to Defendant and the Award Is Excessive.

The District Court has awarded defendant \$20,000.00 as attorneys' fees. To support this award, the Court entered findings of fact as follows:

“XXXXIII.

“Plaintiff's conduct is convincing that it considered the validity of Poux '017 and Silberman '793 as being questionable and had not heretofore permitted their adjudication.

XXXXIV.

“Notwithstanding the licenses by Silberman and assurances given defendant by Silberman and McKee, this suit was instituted by plaintiff with no further investigation as to infringement.

“XXXXV.

“The action was brought by plaintiff in bad faith and without reasonable belief in the validity of the patents and the litigation proves harassment and misconduct on plaintiff's part.”

These findings are clearly erroneous. Finding No. XXXXIII is apparently based upon the observation by the Court that, though plaintiff has brought several suits involving Poux '017, these suits have been settled and never went to trial.

We may ask “What's wrong with that?” We understood that the policy of the law was to encourage the settlement of lawsuits. No less than 30 days ago, a retired Federal Judge (Judge Biggs) was sitting in Los Angeles, calling cases at issue on a special pretrial calendar attempting to arrange as many settlements as possible, and he was very successful.

Furthermore, this finding is obviously erroneous as applied to Silberman. Talon acquired title to the Silberman Patent April 18, 1949 [Ex. 8].* This suit followed promptly, being filed October 17, 1949. The delays in prosecuting this case are not chargeable to plaintiff, who was in fact enjoined from prosecuting the case during the defendant's bankruptcy proceedings.

We don't think it proper to infer that a patent owner who pays \$75,000.00 for a patent and who files action on it within six months, exhibits any lack of faith in the patent.

So what we have here is simply the ordinary, usual patent case. Any harassment of defendant is that normal to any defendant in such a case. Even the acts relied upon by the District Court as constituting misuse or violation of the antitrust laws have been found not to have damaged defendant.

The defendant cannot point to a single piece of evidence which supports the finding of bad faith on behalf of plaintiff.

This case is comparable to *Associated Plastics Companies v. Gits Molding Corp.* (C. A. 7), 182 F. 2d 1000, wherein the Seventh Circuit Court of Appeals under similar facts reversed a finding of bad faith and an award of attorneys' fees, pointing out that the plaintiff had a right to rely on the presumption of validity arising out of the grant of the patent.

If the finding of bad faith can stand in this case, it can in any case where the plaintiff does not prevail, which

*It had secured a license under it June 16, 1945 [Ex. 7].

in effect means attorneys' fees can be awarded in any such case despite this Court's rulings in *Day Brite Lighting v. Ruby Lighting Corp.*, 191 F. 2d 521, and *Parkin-Theatres v. Perkins*, 190 F. 2d 137.

In any event, the fees awarded defendant are excessive, and amount to a windfall for defendant. The testimony of defendant's lawyers shows they agreed to handle the case of \$13,500.00 [R. 1293-1294].

Now this case was at least half an antitrust counterclaim which defendant lost. The case itself took nine trial days (two days more were used in testimony as to attorneys' fees). Under such circumstances, \$20,000.00 is clearly excessive. In fact, this Court has so ruled in *Dubil v. Rayford Camp & Co.*, 184 F. 2d 899, where \$15,000.00 was held excessive in a nine-day patent case.

In conclusion, then, with respect to the award of attorneys' fees, we find that this is not a proper case for the award of attorneys' fees to defendant and, in any event, the award made is excessive.

Conclusion.

In conclusion it is respectfully submitted that the Silberman Patent is a valid patent covering a new combination of elements having a new functional relationship not present in the prior art and that the invention was successfully employed by California Slide Fastener Company and has been appropriated by defendant by its infringement of the Silberman Patent. The Silberman invention is in no part the work of Havekost and accordingly the patent is valid and infringed.

The special defenses of license and estoppel alleged by the defendant and found by the court are not supported by the record and should be reversed.

The finding and conclusions of the District Court to the effect that plaintiff appropriated improvements from defendant are clearly erroneous and should be reversed.

The finding of misuse and violation of the antitrust laws is not supported by the facts of this case or the appropriate law and should be reversed.

And finally it is respectfully submitted that the court erred in awarding attorneys' fees and in any event the fees awarded are excessive.

It is respectfully submitted that simple justice in this case demands a complete reversal of the District Court.

Respectfully submitted,

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APPENDIX I.

o.	<u>PLAINTIFF'S EXHIBITS</u>	<u>Page References to Record where Exhibits</u>			
		<u>Identified</u>	<u>Offered</u>	<u>Received</u>	<u>Rejected</u>
	Poux Patent No. 2,078,017	227	227	228	
	Metal Strip	242-3	243	243	
	Silberman Patent No. 2,437,793	256	256	256	
	Cardboard Chart of Claim 40 of Pat. '793 Illustrating structure	257	257	257	
	Machine for producing zippers	289	289	289	
	Deposition of Philip Lipson	295	293	295	
-1	Blueprint [Ex. 1 to Lipson Depos.]	295	293	295	
-2	Blueprint [Ex. 2 to Lipson Depos.]	"	"	"	
-3	Print [Ex. 3 to Lipson Depos.]	"	"	"	
-4	Drawing [Ex. 4 to Lipson Depos.]	"	"	"	
-5	Drawing [Ex. 5 to Lipson Depos.]	"	"	"	
-6	Drawing [Ex. 6 to Lipson Depos.]	"	"	"	
-7	Drawing [Ex. 7 to Lipson Depos.]	"	"	"	
-8	Drawing [Ex. 8 to Lipson Depos.]	"	"	"	
-9	Drawing [Ex. 9 to Lipson Depos.]	"	"	"	
-10	Drawing [Ex. 10 to Lipson Depos.]	"	"	"	
-11	Drawing [Ex. 11 to Lipson Depos.]	"	"	"	
-12	Drawing [Ex. 12 to Lipson Depos.]	"	"	"	
-13A to					
-13L	Photographs [Exs. 13-A to 13-L, Inc. to Lipson Depos.]	"	"	"	
-14	Print [Ex. 14 to Lipson Depos.]	295	293	295	
-15	Sketch [Ex. 15 to Lipson Depos.]	"	294	"	
	Agreement 7/16/45 between Talon & Cap-Tin & Silberman	453	455	455	
	Silberman & Talon Agreement 4/18/49	458	458	458	

		<u>Identified</u>	<u>Offered</u>	<u>Received</u>	<u>Rejected</u>
9	Silberman, Charm Slide & Lightning Fasteners, Ltd. Agreement 12/16/46	462	463	463	
10	Agreement 12/31/47 between Silberman & Companhia Brasileira De Metais	463	464	464	
11	Agreement 1/1/40 between Talon & Conmar Products	465	465	465	
12	Agreement 6/7/51 between Talon & Conmar Products	466	466	466	
13	Sundback Pat. 1,467,015	482	482	482	
14	Report of McKee to Meech 4/29/48	572	572	573	
5-A	Metal Strip	736	736	736	
5-B	Metal Closing Jaw	747	747	747	
5-C	Metal Closing Jaw Housing	747	747	747	
15	Copy letter, 8/12/48 to Union Slide	1044	1044	1046	
5-D	Two-Piece Punch	957	957		
16	Copy of Conmar v. Lamar Findings of Fact & Concls. of Law	1035	1035	1035	
17	Agreement, 4/7/44 between Cap-Tin & Queen Mfg. Co.	1035	1035	1036	
18	Letter, 8/11/48 to Sigmund Loew & Union	1039-40	1042	1046	
19	Chart re Poux Pat. '017 Claim 17	1052	1054	1054	
20	Chart re Silberman Pat., Claim 37	1052	1054	1054	
21	Chart re Silberman Pat., Claim 30	1053	1054	1054	
22	Ulrich Pat. 2,221,740	1084	1084	1084	

DEFENDANT'S EXHIBITS

<u>No.</u>					
A	Zipper Chain	420	1000		1000
B	Zipper Chain	420	1000		1000
C	Zipper Chain	420	1000		1000
D	Die Punch	423	1001	1002	
E	Sundback Pat. 1,331,884	440	506	506	
F	Sundback Pat. 1,947,956	510	510	510	
G	Smith Pat. 1,533,352	511	511	511	
H	Johnson Pat. 1,731,667	513	513	514	

	<u>Identified</u>	<u>Offered</u>	<u>Received</u>	<u>Rejected</u>
	Hommel Pat. 1,659,266	517	517	517
	Binns Pat. 2,026,413	518	518	518
K	Taberlet Pat. 2,294,253	520	520	520
,	Wintritz Pat. 2,201,068	520	521	521
M	Sundback Pat. 1,467,015	522	522	522
V	Murphy Pat. 1,664,880	522	522	522
)	Loew Pat. 2,444,706	523	523	523
P-1	Letter, 5/17/47, McCoy to Union Slide	560	560	561
P-2	Letter, 6/16/47, Union Slide to Evans & McCoy	560	560	561
P-3	Letter, 9/15/47, McCoy to Loew	561	561	561
P-4	Letter, 9/23/47, Union to McCoy	561	561	561
P-5	Letter, 9/26/47, McCoy to Lipson	561	561	561
P-6	Letter, 11/12/47, McCoy to Union Slide	561	561	561
P-7	Letter, 11/20/47, Union to Evans & McCoy	562	562	562
P-8	Letter, 6/22/48, Union to McKee	562	562	563
P-9	Letter, 6/25/48, McKee to Loew	564	564	564
P-10	Letter, 1/20/48, McCoy to Union Slide	564	564	564
)	Deposition of Loew taken 11/25/52	566	566	566
R	Assignment, 8/22/49, Havekost to Silberman	578	578	578
S	List of Patent suits filed by Talon	586	586	586
'	Two releases and Stipulation	591	591	591
J	Agreement, 11/21/49, between Talon, Star & Ridgewood	612	612	613
OO	Agreement, 6/12/47, between Talon, Slidelock & Lange	619	619	620
OO	Agreement, 5/10/50, between Talon & Waldes Koh-I-Noor	623	623	624
V	Agreement, 10/6/38, between Talon & Joy Mfg. Co.	632	633	633
K	Stipulation and Final Decree in Talon v. Carney Fasteners	633	633	633
Z				

		<u>Identified</u>	<u>Offered</u>	<u>Received</u>	<u>Reject</u>
Z	List of Holders of Licenses from Plaintiff	633	634	634	
AA	Agreement, 6/19/45, between Prentice Mfg., Cap-Tin & Silberman	645	645	645	
AB	Agreement, May, 1946, between Charm Slide Fastener, Silberman, Slidelock & Lange	646	646	646	
AC	Agreement, 5/22/45, between Talon & Universal Slide	648	648	648	
AD	Agreement, 8/9/45, between Talon & Strauss Fasteners	652	652	652	
AE	Agreement, 5/7/48, between Talon & Marvel Slide	655	655	655	
AF	Agreement, 10/29/46, between Talon & Hared Fastener	656	656-7	657	
AG	Agreement, 6/1/45, between Talon & Rex Slide	657	657	657	
AG-1	Agreement, 9/2/47, between Talon & Rex Slide	970	970	970	
AH	Agreement, 6/1/34, Hookless Fastener & American Fastener	659	659	660	
AH-1	Letter, 6/9/50, American Fastener to Talon	660-1	661	661	
AH-2	Letter Agreement, 7/7/38, between Talon, American & Sterling	661	661	661	
AI	Deposition of Jager taken 11/25/52	688	688	689	
AJ	Deposition of Detweiler taken 11/25/52	689	689	689	
AK	Deposition of Eisenberg taken 11/25/52	689	689	689	
AL	Deposition of Napp taken 11/25/52	689	690	690	
AM	Deposition of Havekost taken 11/27/54	701	1017	1021	
AM-1	Assignment, 12/8/48, Havekost to Lange	701	1021	1021	
AM-2	Havekost affidavit, dated Dec., 1948	701	1021	1021	
AM-3	Silberman Pat. 2,437,793	701	1022	1022	
AN	Deposition of Wray, taken 2/25/55	702	702	702	

	Identified	Offered	Received	Rejected
Piece of Metal described as an ejector	718	718	718	
Ram Block & Punch holder block, metal	734	734	734	
Sketch by Lipson	743	743	743	
Part taken from deft's machine	756	756	756	
Metal punch from machine of California Slide	774	774	774	
Metal punch from deft's machine	775	775	775	
Lipson drawing illustrating strip progression of Silberman	777	778	778	
Lipson drawing illustrating strip progression of deft's machine	777	778	778	
Lipson drawing illustrating closing jaw of Silberman machine in action	780	780	783	
Zipper Chain	806	806	807	
Zipper Chain	806	806	807	
Deft's accused machine	824	824	824	
Vacuum container portion of Ex. AZ	826	826	826	
Deft's "Top-Stop" machine	842	842	842	
A Talon Zipper No. 3	848	848	849	
A Talon Zipper No. 5	849	849	849	
Plastic Zipper	850	850	851	
Letter, 2/4/52, Loew to Lipson	963	999		1000
Sundback Pat. 1,434,857	965	965	965	
Wintriss Pat. 2,336,662	965	965	965	
Ulrich Pat. 2,370,380	966	966	966	
Poux Pat. 2,169,176	966	966	966	
Behrens Pat. 2,267,783	967	967	967	
File history of Poux Pat. '017	968	969	969	
File History of Silberman Pat. '793	969	969	969	
Agreement between Union Slide, Loew & Lipson 9/27/47	1086	1086	1136	
Schedule of deft's damages	1087	1087		
Statement of Services rendered, 2/28/55, Wm. J. Graham to Union Slide	1092-3	1097	1097	
Statement of Services rendered, 3/9/55, W. J. Graham to Union Slide	1094	1097	1097	

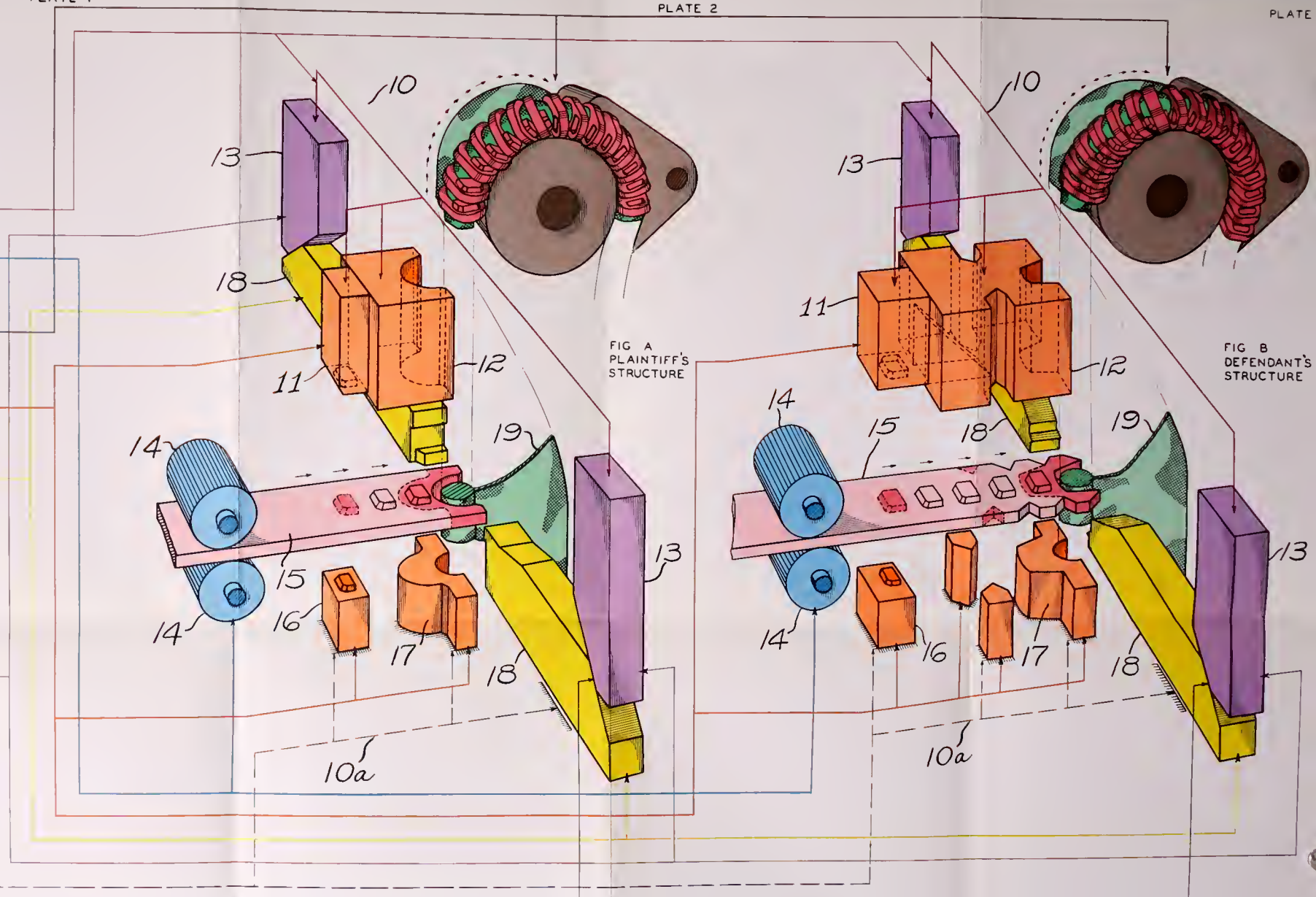
		Identified	Offered	Received	Rejec
BQ	Statement 3/8/55, Biltmore Ho- tel to Wm. J. Graham	1097	1097	1098	
BR	Deposition of Isadore Napp				
BS	Deposition of William Hepworth				
BT	Legal Pat. 2,116,726	1164	1161	1165	
BU	Ulrich Pat. 2,302,075	1165	1165	1165	
BV	Ulrich Pat. 2,338,884	1165	1165	1165	
BW	Prentice Pat. 2,116,712	1165	1165	1165	
BX	Thayer Pat. 322,997	1171	1166		1177
BY	Graham's time record	1203	1203	1203	
BZ	Schmeiding affidavit	1304	1182		1182
CA	Bean Affidavit	1304	1183		1183
CB	Fulwider affidavit	1304	1183		1183

SILBERMAN #2,437,793

CLAIM 40.

IN APPARATUS FOR FORMING SLIDE FASTENER STRINGERS,
THE APPARATUS
INCLUDING

1. A BASE,
2. A RAM
MOVABLE WITH RELATION TO THE BASE,
3. MEANS
FOR FEEDING A SUBSTANTIALLY UNIFORM METALLIC
STRIP BETWEEN THE RAM AND THE BASE,
4. MEANS
FOR FEEDING A TAPE IN A FIXED PATH
PAST THE END OF THE FED STRIP,
5. THE RAM AND THE BASE HAVING COMPLEMENTARY MEANS
FOR FORMING AND SEPARATING A SLIDE
FASTENER ELEMENT FROM THE FED STRIP,
6. A PAIR OF JAWS
ON THE BASE
IMMEDIATELY AT THE POSITION OF THE SEPARATING MEANS,
THE JAWS BEING DISPOSED ON EITHER SIDE OF THE TAPE
AND BEING SLIDABLE TOWARD EACH OTHER
FOR ENGAGING AND CLOSING THE ELEMENT UPON
THE EDGE OF THE TAPE AS IT IS SEPARATED
FROM THE STRIP,
7. AND MEANS
ON THE RAM
FOR ENGAGING THE JAWS TO DRIVE THEM
INTO ENGAGEMENT WITH THE ELEMENT
TO CLOSE IT UPON THE EDGE OF THE TAPE,
TO CLOSE IT UPON THE EDGE OF THE TAPE,
8. THE JAWS AND THE JAW ENGAGING MEANS HAVING CAM FACES
FOR DIRECT ENGAGEMENT.





IN THE
United States Court of Appeals
FOR THE NINTH CIRCUIT.

Civil Action—No. 15714.

TALON, INC.,

Appellant,

v.

UNION SLIDE FASTENER, INC.,

Appellee.

UNION SLIDE FASTENER, INC.,

Appellant,

v.

TALON, INC.,

Appellee.

**BRIEF ON BEHALF OF APPELLANT UNION
SLIDE FASTENER, INC.**

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FILED

JUL 14 1958

PAUL P. O'BRIEN, CLERK



SUBJECT INDEX.

	PAGE
STATEMENT OF JURISDICTION.....	1
UNION'S STATEMENT OF THE FACTS.....	3
SPECIFICATION OF ERROR.....	10
ARGUMENT	13
1. Talon's illegal acts were directed at Union and Union is entitled to show its resulting damage	13
a. Talon's baseless litigation is part of its illegal plan, is directed against Union and Union is damaged thereby.....	14
b. Talon's sales at less than cost to eliminate competition and directed at Union and Union is damaged thereby.....	19
2. Union's damage was held speculative after Union's evidence regarding damages had been excluded	20
3. Proof of exact damage is unnecessary where the damage results from the wrongdoer's acts	21
CONCLUSION	23
APPENDIX—Pertinent Statutes	1a

NOTE—List of exhibits pursuant to Rule 18, Sec. 2(f)
will be found in Appendix of Plaintiff-Appellant.

TABLE OF CASES.

	PAGE
<i>Aiken v. Wisc.</i> , 195 U. S. 194, 206.....	15
<i>Bigelow v. RKO Pictures</i> , 327 U. S. 251.....	21
<i>Eastman Kodak Co. v. Southern Photo Co.</i> , 273 U. S. 359	21
<i>Greenleaf v. Brunswick-Balke Collender Co.</i> (DC Pa.) 79 F. Supp. 364, 5.....	13
<i>Hanlon Drydock v. Southern Pacific</i> , 92 Cal. App. 230	22
<i>Kobe v. Dempsey Pump Co., et al.</i> , 198 F. 2d 416 (CA, 10—1952)	14
<i>Learned v. Castle</i> , 78 Cal. 454, 461.....	22
<i>Marienelli v. United States</i> , (D. C. N. Y.) 227 F. 165..	13
<i>Package Closure Corporation v. Scalright Co.</i> , 141 F. 2d 972 (CA—2, 1944).....	19
<i>Permanents Metals Corp. v. Pista</i> (C. C. A. 9th) 154 F. 2d 568.....	22
<i>Porto Rican American Tobacco Co. v. American Tobacco Co.</i> (CA—2, 1929) 30 F. 2d 234.....	19
<i>Shawnee Compress Co. v. Anderson</i> , 209 U. S. 423, 28 S. Ct. 572, 52 L. Ed. 865.....	13
<i>Standard Oil Co. v. United States</i> , 283 U. S. 163, 51 S. Ct. 421, 75 L. Ed. 926.....	13
<i>Standard Oil Co. of New Jersey v. United States</i> , 221 U. S. 1.....	19
<i>Story Parchment Co. v. Paterson Co.</i> , 282 U. S. 555 (1931)	19, 21, 22
<i>Swift & Co. v. U. S.</i> , 196 U. S. 375, 25 S. Ct. 276, 49 L. Ed. 518.....	13

STATUTES.

15 U. S. C. Sec. 15.....	2
28 U. S. C. Sec. 1291.....	2

IN THE
United States Court of Appeals
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TALON, INC.,
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Appellee.

UNION SLIDE FASTENER, INC.,
Appellant,
v.

TALON, INC.,
Appellee.

Civil Action.
No. 15714.

**BRIEF ON BEHALF OF APPELLANT UNION
SLIDE FASTENER, INC.**

This brief relates solely to the appeal of Union Slide Fastener, Inc., hereinafter called "Union," from that portion of the judgment dismissing the counterclaim herein and from an order denying Union's motion for a new trial on the counterclaim. Union will file additional brief material in response to the cross appeal of Talon, Inc., hereinafter called "Talon," in accordance with the Rules of this Court.

Statement of Jurisdiction.

The plaintiff, Talon, brought this action on October 17, 1949, seeking to enforce an alleged claim for infringement of six of its patents by Union. In its answer, Union denied the validity of each patent as well as infringement by it and

included a counterclaim against Talon alleging violation of the anti-trust laws.

Jurisdiction of the Court under the Patent laws of the United States is alleged in paragraph III of the complaint (Rec. 4) and is admitted in paragraph III of the amended answer (Rec. 24). Jurisdiction of the Court over the counterclaim is invoked by paragraph I of the counterclaim (Rec. 31, 32) under the Clayton Act, 15 U. S. C. 15, cited in the appendix p. 1a.

On November 24, 1952, on motion by Talon, the complaint was dismissed as to four of Talon's patents.

A trial was finally conducted before Judge James M. Carter in the United States District Court for the Southern District of California, Central Division from March 1, 1955 to March 15, 1955.

In a Memorandum to Counsel filed July 17, 1956 (Rec. 130-154) the District Court held Talon's two remaining patents, Poux, 2,078,017, and Silberman, 2,437,793, invalid and not infringed (Rec. 136-141). The Court further decided that Talon was estopped to assert infringement of these two patents (Rec. 140). The Court went on to find Talon guilty of unclean hands and misuse of its patents under the anti-trust laws (Rec. 141-152). The Court also decided that Union had failed to prove damages to itself and causal connection between damage to Union and the unlawful acts of Talon (Rec. 153). Union was permitted to amend its counterclaim to the extent that the anti-trust allegations were framed as an affirmative defense (Rec. 153).

Union moved on June 7, 1957 for a new trial on its counterclaim (Rec. 1615) which was denied by the Court (Rec. 1653).

From the final decision of the District Court dismissing Union's counterclaim and motion for a new trial, Union appeals under 28 U. S. C. 1291 (appendix, p. 1a).

Union's Statement of the Facts.

Prior to 1934, Talon had enjoyed a dominant position in the sale of slide fasteners or zippers throughout the world, a position sustained largely by its patents. By 1934, however, Talon's patent situation was rapidly deteriorating and Talon deemed it necessary to embark upon a program calculated to control the trade in zippers and to maintain its old monopoly.

This program, altered only slightly over twenty years, comprised three original phases:

1. The purchase of zipper manufacturing patents, irrespective of their merit, with which Talon hoped to cloak its monopoly with an aura of respectability (Finding of Fact XXXIII, Rec. 186).
2. The making of bogus royalty and license agreements based upon these patents to divide the market in accordance with Talon's scheme of things (Findings of Fact XXXII, XXXIII, XXXIV, XXXV—Rec. 183, 4).
3. The commencement of baseless litigation upon worthless patents to the point of a consent decree before trial, the decree containing the desired royalty and license arrangements (Findings of Fact XXXV, XXXVII, Rec. 186, 7).

A fourth phase was introduced about 10 years ago:

4. The introduction of competitive products sold by Talon at less than cost, underselling such competitors as might survive the other parts of the program (Finding of Fact XXXI—Rec. 183).

The facts of Talon's plan are as clear as they are ugly: as the District Court was quick to perceive (Rec. 145, *et seq.*).

In 1934, Talon decided to allocate sales territories and to arrange quotas for its competitors. This was reflected in the so-called "American Agreement," defendant's Exhibit AH (Rec. 125). The "American Agreement," antedating the patents in suit, attempted to control prices and fix "quotas," i. e., to fix the percentage of the market that each

of Talon's competitors were permitted to have. The District Court recognized the illegality of this arrangement (Rec. 146). Efforts such as those exemplified by the "American Agreement" were met with increasingly strict enforcement of the anti-trust laws and Talon, perforce, became increasingly more ingenious and subtle in its scheme to control the market.

On April 20, 1937, a patent to Poux, No. 2,078,017 was issued. The Poux patent, a slim reed dressed up by Talon in the guise of a club, was one of several patents purchased by Talon to cover its subsequent operations with apparent legality. The operations began with the disposition of Talon's larger competitors.

Armed with the Poux patent as a pretended sword of righteousness, Talon sued Conmar Manufacturing Co. on October 18, 1937. Conmar was Talon's biggest competitor, and as it developed, was prey indeed worthy of Talon's talents. Conmar had obtained a new "high speed" machine for making zipper chain, the teeth and tape which are the base of all zippers. New at least were such machines to Talon, who had been using "low speed" machines. It was true that the so-called "high speed" machine used by Conmar made a product of somewhat lesser quality than Talon's slower machine, but the threat of increased capacity offered by such machines was indeed potent.

Talon prudently saved its Poux patent for another day however, resolving its differences with Conmar by consent decree, a disposition often to occur in Talon cases. Conmar obtained a royalty-free license extending approximately *25 per cent of Talon's net sales of zippers during the previous year*. According to the license, if this "quota" were exceeded by Conmar, royalties became applicable which would make such increased production by Conmar unprofitable. The license agreement was quite indifferent to patents and indeed failed to recite which if any of Talon's patents were to be used by Conmar. In addition, Talon bolstered its own, weak patent position by obtaining licenses under Conmar's patents. It is interesting to note that the result of the Talon-Conmar agreement was and has been to main-

tain Conmar in second place in the industry. As a practical matter, the testimony shows that the royalty free quota fixed under the Talon-Conmar agreement was exceeded upon only one occasion and at that time waived by Talon, whose real interest was, of course, control of the market—no royalties.

It was while the Conmar suit was yet pending that Talon first devised the escalator royalty which was to be its handiest tool. In October of 1938 Talon exacted a royalty arrangement from the Joy Fastener Co., which first demonstrated this escalator royalty technique. Contrary to customary patent licensing practice which reduces royalty with increased manufacture, the Talon-Joy agreement, defendant's Exhibit X (Rec. 124), provided that Joy should pay to Talon a relatively small royalty (subsequently modified to no royalty) covering Joy's manufacture up to a given percentage of the national production of zippers. The evil intent of the agreement laid bare in an increasing royalty as Joy's manufacture increased beyond this point where Joy's manufacture would necessarily become unprofitable.

Having disposed of its biggest competitor, Talon waited out the war and in 1945, dominated the zipper field to the extent of 60 per cent of total zipper production. As Talon's witness Meech testified, "Competition started to come into the picture to a greater degree" (Rec. 605).

On May 22, 1945, a license agreement was made by Talon with Universal Fastener Corp., defendant's Exhibit AG (Rec. 125). Universal—today called Serval—was one of the leaders in the zipper business (Rec. 651), holding about fifth or sixth position (Rec. 651, 2). The Talon-Universal agreement is still in force (Rec. 649, 650) and provides for a minimum royalty-free quota based on 25 per cent of *Talon's* production, with a 5 per cent royalty payable for production over the quota. It is interesting to note that as in the case of Conmar, *royalties have never been paid by Serval.*

Having limited its larger competitors, Talon turned to its lesser competitors, the first prey being Rex Slide Fastener, which took a license on June 1, 1945. The Talon-Rex

agreement at first provided for a 1½ per cent royalty on zippers and 2½ per cent on chain, defendant's Exhibit AG (Rec. 125). This agreement which varied the usual escalator royalty theme was superseded by a second agreement of September 2, 1947, defendant's Exhibit AG-1 (Rec. 125), which incorporated Talon's tested formula for monopoly. The second Rex agreement provided for a royalty-free quota of 27,500,000 units, with a 5 per cent royalty payable for any excess production over the prescribed quota. Apparently, Rex had been able to increase production to the point considered dangerous by Talon.

On July 16, 1945, Talon entered its first agreement, plaintiff's Exhibit 7 (Rec. 120), with Cap-Tin and one Silberman, purported to be the inventor of one of the patents still in suit. This agreement provided for Talon's usual lofty gift of a royalty-free quota, with a massive 10 per cent penalty for production exceeding the quota. Silberman had some zipper patents of his own which Talon had considered obtaining to the extent of getting an option to purchase. Obviously, if Silberman had anything, he could not be allowed to run away with the market until Talon decided whether it was worthwhile to exercise its option. Talon did so exercise its option, despite a holding by Judge Woolsey that Silberman was an "industrial pirate" *Conmar Mfg. Co. v. Lamar Slide Fastener* (U. S. D. C.—S. D. N. Y.), Rec. 1032, and purchased the Silberman patent at a crucial time as we shall see.

The next license was granted by Talon to Strauss Fasteners, Inc., on August 9, 1945, defendant's Exhibit AD (Rec. 124). This license did not relate to either of the patents in suit, but it reveals Talon's efforts to restrict any competitor who might affect Talon's position; it contains a provision whereby Talon is licensed on patents owned by Strauss itself "insofar as those patents have any of the elements of Talon patents."

On October 26, 1946, came an agreement with Hared Fasteners, Co., defendant's Exhibit AF (Rec. 125). This agreement did not provide for a quota control but limited Hared to the use of ten machines subject to a 1½ per cent

royalty on zippers and a 2½ royalty on parts. Hared was later purchased by Conmar.

On May 7, 1948, plaintiff granted a license to Marvel Fastener Co., including quota control, with an initial royalty-free quota of 15,000,000 units and a 5 per cent royalty for production in excess of prescribed quotas. *No royalties were ever paid by Marvel* (Rec. 656).

On November 21, 1949, Talon licensed Star Fastener Co., providing for an initial royalty-free quota of 30,000,000 units and a 3 per cent royalty on production in excess of that quota. No royalties have ever been paid under this agreement. Star was a special thorn in the Talon hide and required special consideration by Talon. Although the Talon-Star agreement was made after Talon had acquired the Silberman patent (2,437,793) which purportedly covered "high speed" machines, this patent was not licensed to Star. Talon's witnesses gave as the reason for this singular omission that Star did not require a license under the Silberman patent—"Star was the licensee of Conmar, and they were using a *Conmar* type machine" (Rec. 622). Apparently, Talon's principal concern was to prevent Star, the only other company operating high speed machines, from getting ahead of Talon in zipper production.

On May 10, 1950, a royalty-free license and cross-license agreement was entered into by Talon and Waldes Koh-I-Noor, defendant's Exhibit W (Rec. 124). Talon in its testimony was unable to explain why the Waldes required any license from it. Waldes used a different (Prentice) machine; (Rec. 684, 5) its principal business was hardware. Reflecting Talon's fear of users of high-speed machines, the license included the Poux patent but did not include the Silberman patent.

While negotiating this network of quota control licenses Talon tried litigating to death other concerns that refused to go along, defendant's Exhibit S (Rec. 123); no firm manufacturing zippers was too small to escape its attention. Even firms who were not manufacturing zippers were sued! Talon's blunderbuss was raised against Closurette Corporation of America in the United States District Court for the Southern District of New York, on the

ubiquitous Poux patent. Closurette was a very small concern and as things worked out, was not even engaged in the manufacture of zippers, defendant's Exhibit AN (Rec. 126). In this debacle, Talon wound up paying Closurette's counsel fee.

Also in 1948, patent infringement suits were brought against Max Lange and Slideloek Corporation; another suit against the Carney Fastener Corporation. Both actions, happily for the Poux patent and its owner Talon, were terminated by consent decrees. It was all too much for Carney, however, who went out of business (Rec. 590).

In all its efforts, however, Talon had not overlooked Union and the threat of competition from the West Coast. On September 29, 1949, a meeting attended, *inter alia*, by a Union representative was held in the Los Angeles office of Talon. The story of this meeting must be pieced together from the depositions of Isidore Napp, defendant's Exhibit AL (Rec. 1465 *et seq.*), Robert Eisenberg, defendant's Exhibit AK (Rec. 1456 *et seq.*), and Messrs. Jager, defendant's Exhibit AI (Rec. 1430) and Detweiler, defendant's Exhibit AJ (Rec. 1444). The following facts clearly emerge.

The witnesses Jager and Detweiler agreed that the meeting had been arranged by one, Abramson, of Apparel Manufacturer's Supply Company, a Talon jobber. Oddly enough, Abramson was not present at the meeting.

Mr. Eisenberg testified that he believed that a representative of Conmar (Mr. Tarshes) had been invited. Conmar was not, however, represented at the meeting.

Mr. Detweiler "imagined" that Mr. Jager presided, (Rec. 1446) and stated the purpose of the meeting to be "to air complaints and call a spade a spade." He said Talon's jobbers were concerned because everyone was underselling Talon. Even Mr. Jager admitted the correctness of his answer to defendant's Interrogatory No. 83, that the purpose of the meeting was to discuss market conditions; and Mr. Napp recalled Mr. Eisenberg talking of the rumors about "Wilzip" (Rec. 1472, 3) a low-cost zipper which Talon was to introduce below cost to stifle competition.

Mr. Eisenberg, in his deposition (Rec. 1458, 9, 1460) testified that Mr. Jager presided; that Mr. Jager stated, in effect, that unless the West Coast manufacturers believed, Talon would bring the Wilzip zipper into the market; and that Wilzip had raised havoc with small eastern manufacturers, many of whom had gone out of business because they could not meet the competition. Here was the naked, mailed fist, the threat to squeeze the "little fellows" if they persisted in close competition with Talon.

Mr. Eisenberg's testimony was corroborated by Mr. Detweiler (Rec. 1447, 9). He said there was a discussion about Wilzip zippers as a possibility for the future and that the remark had been made that the Wilzip zipper might be introduced in the Pacific Coast market.

The only reasonable conclusion that can be drawn from the testimony of these witnesses is that Talon, at the meeting of September 29, 1949, was pursuing the fourth phase of its plan to restrict competition and so the District Court found (Finding of Fact XXXI, Rec. 183).

It was in its individual pursuit of Union, that Talon made its masterpiece of irresponsibility. After some desultory correspondence between Talon and Union concerning an alleged infringement, one McKee, an employee of Talon, visited the plant of Union on or about April 18, 1948 and upon his return to the Talon Co. reported about his visit, plaintiff's Exhibit 14 (Rec. 120). This memorandum, although it described Union's operation in detail, was silent on the issue of infringement of Talon's patents.

If given the opportunity, Union could and would prove that:

1. McKee's visit provided Talon with information that made Silberman's machine practical.
2. That Talon appropriated the improvements to its own use, without Union's consent and without compensation. Significantly, the improvements appeared on Talon's exhibit 5 machine which Talon says purport to follow the Silberman patent.
3. After a delay of over three years, Talon suddenly developed an interest in Silberman's patent, and within 10 weeks of having visited Union's plant, acquired the Silberman patent.

4. Without any adequate investigation, Talon then proceeded to sue Union, *inter alia*, upon the Silbermann patent.

This last point is most important, *the only inspection which Talon had ever made of the Union machines, prior to institution of this suit was the inspection of McKee, who, Talon's witnesses say, was not an engineer* (Rec. 513). As in the *Closurette* case, it evidences Talon's intention to employ litigation as a weapon to control the market without any determination as to whether or not there was actual infringement of any Talon patents. The plain fact is that at the time this suit was filed, Talon had no idea whether Union infringed any of Talon's patents or not; McKee was admittedly not qualified to make any judgment on technical matters, yet no other attempt was made by Talon to obtain information prior to the instituting of the law suit (Rec. 575). No drawings or models had ever been examined by an engineer who would be in a better position to determine whether there was an actual infringement; McKee's memorandum was silent in this regard.

The present litigation is nothing more than an extension of Talon's original plan applied to Union, revealed first by the American Agreement and followed without abatement after 1945 when "competition started to come into the picture to a greater degree" designed to arrest any competitive threat.

Specification of Error.

The District Court erred:

1. By concluding that Union was not damaged and that there was no showing of causal connection between Talon's acts and Union's injuries, resulting from what the Court itself found to be a continuing attempt by Talon to control competition in a substantial portion of the zipper industry in violation of the anti-trust laws.

2. By concluding that Talon's actions regarding Union were isolated acts rather than the concluding steps in the

final links in a chain of anti-trust violations extending over a period of twenty years and directed not only against the public in general but at Union in particular.

3. By failing to admit evidence or permit a new trial to show damage to Union flowing directly from Talon's efforts to control competition, comprising the acquisition by Talon of an invalid patent from a third party and the institution of an infringement suit against Union, in bad faith and without reasonable belief in the validity of Talon's patents; the introduction of a zipper sold below cost in Los Angeles, following a price control meeting in that city staged by Talon, and, under the pretext of examining Union's machines to determine possible infringement of which Talon had no knowledge, wrongfully appropriating improvements made by defendant.

In particular the Court erred in sustaining the objection of plaintiff's counsel as follows (Rec. 1128-1132):

"Mr. Mockabee: Regarding Schedule II, your Honor, Mr. Lester Greene of the firm of Greer and Greene, certified public accountants, would, if called to the stand, testify that the items in Schedule II regarding estimated net profits that should have been earned is based upon a figure of 10 per cent of the invested and borrowed long-term capital and is a fair return on such investment. And he would also testify that from an inspection of the books of Union Slide Fastener, Inc., the profits and losses shown in Schedule II for the fiscal years ending February 28, 1950, through February 28, 1955, the last year being estimated because the books are not yet (1103) closed, are a true reflection of the profits and/or losses during that period.

The Court: Is that what his testimony would be?

Mr. Mockabee: He would further testify with regard to items on the books, which appear on the books, with regard to the other schedules, your Honor.

The Court: Is that your offer of proof?

Mr. Mockabee: Yes, sir.

Mr. Leonard Lyon: I object to the offer as incompetent, irrelevant and immaterial.

The Court: Of course, the general objection is good and it will be sustained. In addition, there is no causal connection shown, nor can any be shown, between what the loss is on the books for each fiscal year and any activities of the plaintiff in this action. Nor is the estimated earnings any more than a mere estimate based upon 10 per cent of invested capital, which doesn't take into account competition, the competitive conditions in the industry. This is a very competitive industry. We have heard testimony on that already. It doesn't include new devices coming out, new companies coming into the field, and such things as the introduction of the Wilzip zipper, or some other zipper that might come in by some other company.

Mr. Mockabee: Of course we maintain, your Honor, that the introduction of the Wilzip zipper was not normal competition, but was the consummation of a threat to do what plaintiff had (1104) done back East, and that is wrecked small companies through the introduction of a cut-price zipper, if defendants and others on the West Coast did not maintain prices.

The Court: All right. The objection to the offer of proof is sustained. You may step down, Mr. Witness."

* * * * *

"Mr. Mockabee: May I have an opportunity to present some law on the question of some of these matters in these schedules which have been objected to and the objection sustained?

The Court: No, I am not going to permit you to do that. I have taken some proof on attorney's fees and expenses, and time. These other matters are pure speculation. It is highly speculative. From the facts of this case I can't see how loss would be sustained by defendant by virtue of quota agreements entered with other manufacturers . . ."

ARGUMENT.

1.

Talon's illegal acts were directed at Union and Union is entitled to show its resulting damage.

Union concedes that a showing of injury to the claimant in a civil suit for treble damages under the anti-trust laws is essential to sustain the claim; evidence of injury to the public only is certainly not sufficient. It is also conceded that there must be causal connection between the alleged anti-trust violation and injury to the claimant. But, Union argues, it is the *ultimate result against the claimant*—rather than the effect of the individual parts of the wrongdoer's plan—which must be considered; the unity of the plan embraces all the parts.

As aptly stated in *Greenleaf v. Brunswick-Balke Colender Co.*, (D. C. Pa.) 79 F. Supp. 364-5:

“Once it became apparent, as in the case before us, that the particular act or acts complained of as causing the injury are connected with or part of an unlawful plan to monopolize, the court will not segregate them to determine if they had gone beyond the bounds of legality; it will view the defendant's acts as a whole, for the parts take on the coloring of the general plan or scheme. *Swift & Co. v. United States*, 196 U. S. 375, 25 S. Ct. 276, 49 L. Ed. 518; *Shawnee Compress Co. v. Anderson*, 209 U. S. 423, 28 S. Ct. 572, 52 L. Ed. 865; *Standard Oil Co. v. United States*, 283 U. S. 163, 51 S. Ct. 421, 75 L. Ed. 926; *Marienelli v. United States*, D. C. N. Y. 227 F. 165.”

Firstly, it is Union's position that the present suit by Talon is an overt act employed by Talon against Union, that the suit was a detestible abuse of the courts and that the suit and its ramifications have resulted in great damage to Union which they are entitled to prove and recover. The use of meritless patent suits to obtain an illusory “licensing” agreement, or to wear the defendant out, are old tricks

of Talon and have been used repeatedly by them in exercise of their scheme.

Secondly, Union asserts that the illegal use of a competitive product such as the Wilzip and the present day Falcon zipper made by Talon (Rec. 918) where such a competitive product is sold at less than cost in order to suppress competition were acts directed both against the public and Union; Union should be allowed to show the extent of its damages flowing from such acts.

a. Talon's baseless litigation is part of its illegal plan, is directed against Union and Union is damaged thereby.

Talon's use of baseless litigation to intimidate and overwhelm a competitor presents a situation that has been judicially considered.

Thus, in the case of *Kobe v. Dempsey Pump Co., et al*, 198 F. 2nd 416 (CA, 10-1952); certiorari denied, 344 U. S. 837, the origins of a plan to corner the oil well hydraulic pump market, comprising a patent pooling arrangement, admittedly had no direct effect on the claimant Dempsey. When, however, in implementation of the original plan, Kobe sued Dempsey without concrete information that Dempsey's pumps actually infringed Kobe's patents, the court held without hesitation that the suit was part of the plan and had injured Dempsey; Dempsey was adjudged entitled to treble damages. The court's statement is eminently in point:

“Kobe strenuously contends that even though it may be guilty of monopolistic practices such practices did not reach the defendants until the commencement of the infringement action, and any damages suffered by them resulted only from that action. It is said that to allow recovery of damages resulting from the infringement action would be a denial of free access to the courts. We fully recognize that free and unrestricted access to the courts should not be denied or imperiled in any manner. *At the same time we must not permit the courts to be a vehicle*

for maintaining and carrying out an unlawful monopoly which has for its purpose the elimination and prevention of competition."*

* * * * *

“The infringement action and the related activities, of course, in themselves were not unlawful, and standing alone would not be sufficient to sustain a claim for damages which they may have caused, but when considered with the entire monopolistic scheme which preceded them we think, as the trial court did, that they may be considered as having been done to give effect to the unlawful scheme.”

It is clear then that Talon's reckless legal action was a pertinent facet of its anti-trust scheme and was certainly directed against Union. Union should not be prevented from proffering evidence to establish facts from which illegal monopolies may be inferred—although such acts by themselves would not be illegal.

In *Swift & Co. v. United States*, 196 U. S. 375, (1905) citing *Aiken v. Wisc.*, 195 U. S. 194, 206, (1904) Mr. Justice Holmes said:

“The scheme as a whole seems to us to be within reach of the law. The constituent elements, as we have stated them, are enough to give the scheme a body and, for all that we can say, to accomplish it. Moreover, whatever we may think of them separately when we take them up as distinct charges, they are alleged sufficiently as elements of the scheme. It is suggested that the several acts charged are lawful and that intent can make no difference. But they are bound together as the parts of a single plan. The plan may make the parts unlawful.”

The District Court apparently gained the erroneous impression that each step of Talon's plan to restrain competition must somehow have resulted in injury to the claimant.

The following colloquy took place between Union's counsel and the Court. (Rec. 1131-1132):

*Emphasis where added is ours, unless stated to the contrary.

“Mr. Mockabee: May I have an opportunity to present some law on the question of some of these matters in these schedules which have been objected to and the objection sustained?”

The Court: No, I am not going to permit you to do that. I have taken some proof on attorneys’ fees and expenses, and time. These other matters are pure speculation. It is highly speculative. *From the facts of this case I can’t see how loss would be sustained by defendant by virtue of quota agreements entered with other manufacturers.*

This man never was subject to a quota agreement.”

Union urges that this faulty impression led the District Court to commit error in refusing to accept proof of damages caused by Talon’s groundless suit against Union in furtherance of its plan. The plan, as in the case of many unlawful schemes, employed several phases, but had a common goal. In one phase Talon relied on restrictive agreements; in another on law suits never brought to trial to force acceptance of restrictive agreements; and, finally, on a carefully staged suit which Talon manufactured because Union refused to yield to the thinly veiled threat of the Los Angeles price control meeting.

Surely, until Union was singled out and attacked by Talon’s vindictive litigation it would have been difficult, if not impossible for Union to prove that each preceding step in the plan had injured it any more than other manufacturers. Just as surely, however, Union’s rights at the time Talon’s scheme became specifically directed against it, were not diminished by the fact that the plot was conceived against the public as a whole.

The District Court’s own findings reflect the relationship of Talon’s acts to Union damage. Thus the Court found:

That plaintiff’s conduct is convincing that it (Talon) considered the validity of the two patents in suit relied on by plaintiff as being questionable and had not heretofore permitted their adjudication. (Finding XLIII, Rec. 186);

That his motion was brought in bad faith by plaintiff, and without reasonable belief in the validity of the patents, and this litigation proves harassment and misconduct on plaintiff's part (Finding XLV, Rec. 186);

The conference in Los Angeles between plaintiff and local zipper manufacturers in that city in 1949 was held in an attempt to maintain price control and evidenced an intent to misuse plaintiff's patents and to violate the anti-trust laws, and plaintiff introduced a cheap zipper in the Los Angeles area (Finding XXXI, Rec. 183);

That, under a pretext of ascertaining infringement, plaintiff was allowed to examine Union's machinery and appropriated, without compensation, defendant's improvements (Finding XLVI, Rec. 187);

That the improvements on Union's machines observed by McKee (plaintiff's Vice-President) caused Talon to buy Silberman '793 (Finding XV, Rec. 179, 180);

That Silberman '793 and the claims in issue, and the accused machine are not the same (Finding XIII, Rec. 178);

That Talon failed to show that a machine of the claims in issue of Silberman '793 ever operated (Finding XX, Rec. 181);

That Poux '0;7 was invalid (Findings VI to X, Rec. 173 to 176); and

That Silberman '793 was invalid (Findings XI to XVII, Rec. 177 to 180).

Union does not claim direct damage by reason of Talon's quota control agreements or by dealings between Talon and its competitors. Union does claim, however, Talon's lawsuit and the situations that arose in connection with it, were part of its plan to control the industry and that the very findings of the District Court show that Talon's litigation and its related acts to be part of a continuing plan

to restrain competition and to enmesh and destroy its weaker competitors.

The institution of this suit without any real determination of infringement, the acquisition by Talon of Silberman '793, the misappropriation of Union's improvements, and the Los Angeles price control meeting followed by the marketing by plaintiff of a cheap zipper, all show a purposeful extension of the same unlawful plan, applying the brunt of the plan directly to Union and very nearly accomplishing its object: the destruction of Union.

The District Court's error deprived Union of a crucial right to show damage by the institution of the suit, by the acts preceding it, and by the conduct of Talon before, during and after the suit.

On the motion for a new trial on the counterclaim, Union attempted to point out the District Court's error, and detailed the proof of damages it felt entitled to offer (Rec. 1618-1622). Whether or not the proof offered would have satisfied the District Court is not important. The point is that Union was entitled to the opportunity to present its evidence. Surely, if the proof showed that before Talon concentrated its harassment of competitors on Union, Union had sold machines and thereafter could sell no more because of the suit (Rec. 1624-1625), there was clear and ascertainable damage resulting from the suit which was the last step in imposing Talon's illegal plan on Union in particular.

The District Court's ruling, in effect, holds a proven violator of the Anti-Trust laws immune to a claim for damages by a victim, provided the victimizing is accomplished, *inter alia*, by means of a law suit, regardless of its merit or motivation.

In summary, the proof here is adequate that the present litigation was brought, not to establish a right, but as the end product of a plan to restrain competition which the District Court found to be unlawful. Upon a suit brought in bad faith and without a reasonable belief in the validity of the patents (Rec. 186), and Talon can find little support

for any proposition that the courts may be used freely as vehicles to implement an unlawful plan to restrain competition.

b. Talon's sales at less than cost to eliminate competition are directed at Union and Union is damaged thereby.

The sales of products below cost to eliminate competition have been condemned since 1911, *Standard Oil Co. of New Jersey v. United States*, 221 U. S. 1 and are still held to be unlawful, *U. S. v. New York Great Atlantic and Pacific Co.*, 67 F. Supp. 626, affd. 173 F. 2d 79 (CA 7).

Talon's position is in the classic tradition of monopoly. Where there is evidence of a conspiracy in restraint of trade, the sale of goods below the point of fair profit or cost of production renders the wrongdoer liable to his competitors for treble damages. *Story Parchment Co. v. Paterson Co.*, 282 U. S. 555 (1931).

The *Story* case has been followed consistently and is the basis for the ruling in *Package Closure Corporation v. Scalright Co.*, 141 F. 2d 972 (CA-2, 1944). In the *Package* case a valid cause of action for treble damages was said to be alleged where it was stated that the wrongdoer conspired to drive the claimant out of business by fixing prices of bottle caps, etc. at prices below necessary to realize a reasonable profit and that as a result the claimant was compelled to close its business. Proximate cause is not a particular required allegation, the Court said, notwithstanding its jurisdictional nature.

Even injunction is a suitable remedy where ruinous competition and lowered prices are employed to eliminate weaker competitors. *Porto Rican American Tobacco Co. v. American Tobacco Co.*, 30 F. 2d 234 (CA-2, 1929).

Surely such acts, which the District Court has found to exist, are acts against Union, for which Union is entitled to enter its proof and to obtain redress.

2.

Union's damage was held speculative after Union's evidence regarding damages had been excluded.

The District Court, after rejecting proof of damages at the trial by defendant (Rec. 1131-1132), remarked that damages were speculative and uncertain (Rec. 1132).

Obviously, if the District Court was in error in rejecting such proof, it could not, on the basis of the incomplete evidence accepted, properly say that the damages were speculative. Until all proof of damages had been submitted, there would be no basis for any ruling as to damages.

On Union's motion for a new trial on its counterclaim, Lipson's affidavit showed the following:

a. That before this action was commenced, Union had sold high-speed zipper machines for a profit and had constructed additional machines for sale; and that after the action was begun no more machines could be sold, although eight were on hand ready for sale.

b. That, before the action, Union had a competitive advantage which was lost when Talon misappropriated elements designed by Union to eliminate defects in high-speed zipper machines, and that such misappropriation was intimately related to the suit brought by Talon against Union because Talon had fraudulently attempted to pass off the misappropriated elements as part of the device of Talon's Silberman patent.

c. That the action brought by Talon against Union adversely affected Union's credit rating. This is evident from the fact that one of the principal reasons for the cancellation of the R. F. C. loan was the pendency of the suit (Rec. 1634).

Further Union offered to show not only the facts of its near bankruptcy as a result of Talon's acts, but of its loss in profits for the various fiscal years (Rec. 1128-1135). The exclusion of such important evidence gives little basis

for ruling that what evidence lay before the court was "speculative."

If the District Court had allowed proof of these matters to be placed in the record, a ruling that Union's damages were speculative would have been contrary to the evidence. The loss alone of profits on sales of machines constructed by Union and goods prior to the suit would have been easily subject to calculation.

3.

Proof of exact damage is unnecessary where the damage results from the wrongdoer's acts.

We have said before that the wrongful acts of Talon found by the District Court to be in violation of the anti-trust laws, culminated in the suit against Union and the introduction of the Wilzip zipper and that the suit was connected to the antecedent wrongs of Talon as part of a continuing plan to restrain competition.

It has also been said that the evidence in the record, together with the evidence rejected, tends to show the fact of damage to Union which could have resulted from the lawsuit, and which Union indeed contends did result therefrom.

In these circumstances it is Union's position that any uncertainty as to the damages must be borne by the wrongdoer, in this case, Talon; and that the wrongdoer cannot profit by its wrongdoing by asserting that other factors might have contributed to the victim's losses. As stated by Mr. Justice Stone in *Bigelow v. RKO Radio Pictures*, 327 U. S. 251 (1946)—

"The constant tendency of the courts is to find some way in which damages can be awarded where a wrong has been done. Difficulty of ascertainment is no longer confused with right of recovery."

The court then referred to the cases of *Story Parchment Co. v. Paterson Co.*, 282 U. S. 555 (1931) and *Eastman*

Kodak Co. v. Southern Photo Co., 273 U. S. 359 (1927) both of which were actions to recover treble damages for violations of the anti-trust laws, and both of which involved damages difficult to prove with any degree of certainty. At Pages 264 and 265, the Court said

“The tortious acts had in each case precluded ascertainment of the damages more precisely * * *. Nevertheless, we held that the jury could return a verdict for plaintiffs * * *.

“In such a case, even where the defendant by his own wrong has prevented a more precise computation, the jury may not render a verdict based on speculation or guesswork. *But the jury may make a just and reasonable estimate of the damage based on relevant data, and render its verdict accordingly.* In such circumstances ‘juries are allowed to act upon probable and inferential, as well as direct and positive proof’ (citing the *Story* and *Eastman* cases). *Any other rule would enable the wrongdoer to profit by his wrongdoing at the expense of his victim.* It would be an inducement to make wrongdoing so effective and complete in every case as to preclude any recovery, by rendering the measure of damages uncertain. *Failure to apply it would mean that the more grievous the wrong done, the less likelihood there would be of a recovery.*”

The Court then quoted, with approval, the following language in *Story Parchment Co. v. Paterson Co.* (*supra*):

“*The most elementary conceptions of justice and public policy require that the wrongdoer shall bear the risk of the uncertainty which his own wrong has created.* * * * That principle is an ancient one * * * and is not restricted to proof of damages in anti-trust suits, although their character is such as frequently to call for its application.”

The identical principles have been recognized and applied in the State and Federal Courts in California. *Learned v. Castle*, 78 Cal. 454 at 461 (1889); *Hanton Drydock v. Southern Pacific*, 92 Cal. App. 230 (1928); and *Permanents Metals Corp. v. Pista*, 154 F. 2nd 568 (C. C. A. 9th).

Conclusion.

For all the foregoing reasons this Court should reverse that portion of the Judgment dismissing the counterclaim for affirmative relief in favor of defendant and against plaintiff, and should direct a new trial on the counterclaim.

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APPENDIX.**Statutes Regarding Jurisdiction.**

15 USC Sec. 15:

Suits by persons injured—Recovery of triple damages. Any person who shall be injured in his business or property by reason of anything forbidden in the anti-trust laws may sue therefor in any district court of the United States in the district in which the defendant resides or is found or has an agent, without respect to the amount in controversy, and shall recover threefold the damages by him sustained, and the cost of suit, including a reasonable attorney's fee. (Oct. 15, 1914, c. 323, Sec. 4, 38 Stat. 731.)

28 USC Sec. 1291:

Final decisions of district courts. The courts of appeals shall have jurisdiction of appeals from all final decisions of the district courts of the United States, the District Court for the Territory of Alaska, the United States District Court for the District of the Canal Zone, and the District Court of the Virgin Islands, except where a direct review may be had in the Supreme Court. (June 25, 1948, c. 646, Sec. 1, 62 Stat. 929.)

No. 15714

IN THE

United States Court of Appeals

FOR THE NINTH CIRCUIT

TALON, INC.,

Plaintiff-Cross-Appellee,

vs.

UNION SLIDE FASTENER, INC.,

Defendant-Cross-Appellant.

BRIEF ON BEHALF OF PLAINTIFF- CROSS-APPELLEE.

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TOPICAL INDEX

	PAGE
Action below	1
Question on appeal.....	2
Statement of relevant facts.....	3
Nature and history of Union's business.....	5
Union's statement of facts.....	7
Argument.....	10
Further answer to Union's brief.....	15
Conclusion	16

TABLE OF AUTHORITIES CITED

CASES	PAGE
Chiplets, Inc. v. June Dairy Products Co., 114 Fed. Supp. 129..	11
Cole v. Hughes Tool Company, 215 F. 2d 924, 103 U. S. P. Q. 1	12
Dollac Corp. v. Margon Corp., 118 U. S. P. Q. 257.....	12
Flintkote Company v. Lysfjord, 246 F. 2d 368.....	10, 15
Hunter Douglas Corp. v. Lando Products, 235 F. 2d 631.....	14
International Visible Systems Corp. v. Remington-Rand, Inc., 65 F. 2d 540.....	14
Ronson Patents Corp. v. Sparklets Devices, 112 Fed. Supp. 676	11, 12
Story Parchment Company v. Patterson Parchment Paper Co., 282 U. S. 555, 75 L. Ed. 544.....	11
Straus v. Victor Talking Machine Co., 297 Fed. 791.....	14
Virtue v. Creamery Package Mfg. Co., 227 U. S. 8, 57 L. Ed. 393	12, 14

STATUTES

Sherman Act, Sec. 2.....	3
United States Code Annotated, Title 35, Sec. 271(d).....	12

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TALON, INC.,

Plaintiff-Cross-Appellee,

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Defendant-Cross-Appellant.

BRIEF ON BEHALF OF PLAINTIFF- CROSS-APPELLEE.

The statement of the case as presented in the brief of cross-appellant Union is not adequate for the purposes of this review.

The statement of the facts is misleading in many respects and incorrect in others. The specification of error does not correlate with the opinion and findings of the District Court and does not set out the real question before this court.

Action Below.

The District Court dismissed Union's counterclaim for failure to prove injury to its business or property arising out of the actions complained of.* [Conclusion XVII, R.

*Talon does not concede in this case that it has misused its patents or been guilty of a violation of the antitrust laws. Its position in this regard is set forth in Talon's Opening Brief, pages 12 to 20 and 61-74. Talon will, however, in this Reply Brief not again present that material but will show that the District Court was right in dismissing the counterclaim even assuming that Talon had violated the antitrust laws.

192.] The evidence was not sufficient to establish the fact of damage to Union resulting from the actions of Talon.

On June 7, 1957, Union filed a motion for a new trial. [R. 1616.] In the first paragraph of the brief in support of its motion, Union accurately reviewed the facts and stated:

“On the last day of the trial of this case, March 15, 1955, defendant, in support of its Counterclaim, was permitted to offer some proof on the subject of attorneys’ fees and expenses incurred in the action, *to show damage resulting to defendant from plaintiff’s violations of the anti-trust laws*. Defendant was also given the opportunity to present some evidence of the hardship and expense caused by the suit. But when defendant offered evidence tending to show a loss of profits an objection by plaintiff was sustained.” (Emphasis ours.) [R. 1616.]

The District Court rightfully denied the motion, Union having had its day in court [R. 1653].

The significant point is that by its own admission, Union had full opportunity before the District Court to show damage resulting to it from the actions of Talon. The statements and implications to the contrary in Union’s brief are incorrect and without foundation in the record.

Question on Appeal.

It is thus apparent that the only question on appeal is whether the District Court erred in finding that there was no proof of injury to the business and property of Union arising out of the actions complained of.

Union’s third specification of error set out at page 11 of its brief is not a question on appeal and is inaccurate

and misleading. By Union's own admission, the District Court did give Union an opportunity to introduce or proffer all evidence that it had showing the fact of damage to Union because of Talon's actions. The evidence which was excluded went to the failure of Union to make an assumed profit on its invested capital and went to the amount of damage. This evidence was rightfully excluded as being based upon speculation and conjecture and being irrelevant and immaterial because the fact of damage resulting from acts of Talon had not been established.

There was no failure on the part of the District Court to admit evidence to show damage to Union flowing from Talon's actions.

Statement of Relevant Facts.

The controlling finding is that there was no causal connection between Talon's actions and damage to Union. There is nothing in Union's statement of the facts tending to show that this finding is clearly erroneous.

The District Court found that Talon had unclean hands on the basis of the "quota license agreements" when coupled with an intent and attempt to monopolize in violation of section 2 of the Sherman Act. As evidence of the intent to monopolize, the court relied on the American Agreement [Ex. AH] and the Los Angeles Conference. The facts upon which the District Court based the anti-trust aspects of its opinion are fully set forth on pages 12-20 of "Appellant's Opening Brief" (green brief) on file herein.

Union was not a party to a quota license agreement with Talon. The American Agreement [Ex. AH] was executed in 1934 and Union had no conceivable connection with it. The Los Angeles conference is the only

piece of evidence which has any connection with Union, Union's representative, Lipson, having been present.

The only possible damage to Union resulting from this conference would be introduction of the "Wilzip" zipper to the West Coast. The Korean War started immediately afterward and precipitated a zipper shortage so that introduction of this zipper had no influence on the market and did not damage Union. As to the effect of the introduction of this zipper, Union's own witness Lipson, testified as follows [R. 917]:

"Q. Was Wilzip introduced in Southern California? A. Yes, it was.

Q. Do you know about when it was introduced, from your knowledge? A. I don't remember the exact date. And whether it was introduced on a broad scale or not, I couldn't say, because a few months after that the Korean police action or whatever you want to call it started, and it eliminated any possibility of chiseling, because of the fact that every customer was wanting to buy 50 times the amount of zippers that he was buying, and then when everyone placed orders that were 1000 times the capacity of any manufacturer to produce there would be no reason for chiseling.

Q. Did Wilzip appear on the market after the Korean business? A. No, Wilzip disappeared, to the best of my knowledge, suddenly disappeared from the market when the Korean war broke out." [R. 917.]

While the Wilzip zipper was admittedly an inexpensive zipper, there is absolutely nothing in the record to indicate that it or any other Talon zipper was sold at less than cost.

Nature and History of Union's Business.

The only other facts bearing on the question before the court concern the nature and history of Union's business. When Lipson became associated with Loew on June 19, 1947 [R. 710], Loew was licensed under the Loew zipper machine patent, Exhibit O [R. 1877], by his former employer, Universal Button Company of Canada, to operate 20 machines [R. 897-899]. Lipson testified:

"The Court: So that Universal Button owned the patent?

The Witness: That is correct.

The Court: And Loew had a license to operate 20 machines? (832)

The Witness: Yes, 20 machines under this patent." [R. 899.]

* * * * *

"That license was later on shared by Mr. Loew and myself and assigned to Union Slide Fastener Company—the right to use that license." [R. 897.]

Lipson believed that the Union machines came under that patent:

"Q. (By Mr. Leonard Lyon): In your opinion, was that machine built in accordance with the Loew patent, Exhibit O, a copy of which you have in your hand? A. From the observation of that machine that I have seen, it was." [R. 941.]

Thus Union had the right to operate 20 machines, but no right to sell machines.

When Lipson first went with Loew on June 19, 1947 [R. 710], the Union machines had many defects "contrary to accepted principles in the mechanical field." [R. 712.] Obviously the machines sold in Mexico and Canada

in 1948 [R. 930], and offered for sale in Europe in May and June of 1948 [R. 1376] did not have the mechanical improvements first used by Lipson in 1949 [R. 956-957] and were, on the whole, unsatisfactory. This alone could explain why Union's business in its sales of machines was insignificant.

Union's business of selling zippers and zipper chain was much more important, but no patent in suit related to zippers or zipper chain.

Union never alleged or attempted to prove any interference by Talon in its sale of either machines or zippers because there was no such interference.

Another factor influencing Union's business which should be noted is the fact that Union had two fires of undetermined origin, one October 2, 1949, and the other February 15, 1949 [R. 954-955], and suffered because of the delay of the insurance company in compensating it for the losses.

Finally, there is the RFC loan in the amount of \$28,-440 which was cancelled February 12, 1953 [R. 1633]. This loan was cancelled because, quoting from the letter from the RFC administrator to Lipson's congressman, Norris Paulson, written one day after cancellation:

"An analysis of a recently completed audit reveals that the statement submitted by this company with its loan application was inaccurate and did not reflect the true financial condition." [R. 1634.]

Talon had no conceivable connection with any of these matters.

Union's Statement of Facts.

Most of Union's statement of the facts is beside the point and serves only the obvious purpose of smearing Talon. Nevertheless, the more flagrant misstatements should be corrected.

Starting at page 3 of Union's brief, Points 1 through 4 find no support in the findings noticed or in the record. Point 1, finding XXXXIII [R. 186] in nowise supports the point as a simple reading of the finding will demonstrate. The finding was:

“Plaintiff's conduct is convincing that it considered the validity of Poux '017 and Silberman '793 as being questionable and had not heretofore permitted their adjudication.”

The statement that Talon purchased patents irrespective of merit finds no support in the record. To the contrary, the record shows that Silberman '793 had great merit, Imperial Chemical Industries having paid \$600,000 for the European rights [R. 463, Ex. 9; see p. 37 of Talon's main brief].

Talon's purchase of Poux '017 was a natural act since Poux was a former employee of Talon, he lived in Talon's home town, and later worked for Talon for many years.

With respect to points 2 and 3, Talon has acted throughout in good faith and has rightfully assumed that its patents were valid. Its position was reinforced as late as 1938 by this very Court of Appeals when it affirmed a finding that Sundback patent 1,557,381 was valid (98 F. 2d 1020). Admittedly, Talon settled litigation by license agreements under a variety of circumstances and for a variety of reasons. Nothing in the record indicates that the license agreements were “bogus” or the result of “baseless litigation upon worthless pat-

ents.” Since a patent is presumed valid, it takes more than a few snide inferences to establish that the patent owner considered it worthless. As stated on page 4 of Union’s brief, Talon’s biggest competitor was Conmar. It licensed Talon on its high speed machine and particularly under its machine patent 2,201,068 [R. 1842] and its square shouldered zipper patent 2,221,740 [R. 1714] after each of these patents had been held valid and infringed [R. 1026; Exs. 12 and 16]. Thus Conmar must have regarded Talon’s patents as having real merit or it would not have licensed Talon under its important high speed machine patents that had been litigated and found valid. Certainly Conmar was in position to contest the validity of Talon’s patents.

The statement on page 5 of Union’s brief that Talon had 60 per cent of the zipper business in 1945 is not correct. Meech testified:

“The Court: * * * What percentage of the market did Talon have in 1940, at the time of the execution of the agreement 11? Do you have the figures for 1939 and ’40?”

The Witness: No, I do not, your Honor. At that time Talon controlled—that is immediately prior to the war, around 60 per cent in opinion. During the war, of course, there were no fasteners for civilian consumption. It was all military. (479)

* * * * *

After the war our percentage dropped materially and competition started to come into the picture to a greater degree.” [R. 605.]

Finding XXIX was:

“Subsequent to World War II, plaintiff’s share of the market was down to about 30% of the market. * * *” [R. 183.]

With respect to point 4 and as already noted absolutely nothing supports the statement that Talon sold any zipper at less than cost. This is the grossest sort of misstatement. There is not even an allegation to this effect in Union's counterclaim.

The answer to the statements of alleged appropriation of information as a result of McKee's visit noted at page 9 of Union's brief is found at pages 56-63 of Talon's opening brief (green brief). Union realizes that the lower court's finding of appropriation by Talon of Union's improvements is contrary to the only evidence now in the record on this point and Union now alleges that "If given the opportunity" it could now prove these matters (Br. p. 9). The fact is that all of these improvements were made by Union after March 1949, one year *after* McKee's visit on April 15, 1948 [R. 1415, 956-957].

The statement at page 10 of Union's brief that the only inspection which Talon ever made of Union machines was the inspection by McKee is simply not true. Duplicate machines were owned by Loew, were offered for sale here and abroad and machines were sold in Canada and Mexico [R. 1376-1377].

The only purpose of this approach is to attempt to establish the point that Talon brought suit without reasonable justification. A quick glance at plates 1 and 2 of the Silberman machine and Union's machine, side by side, shows that they are identical and of itself refutes the statement (see folder at back of Talon's opening brief). McKee's visit is the only inspection of Union's machine noted in the record, which in nowise supports the conclusion that it was the only inspection made of Union's machine prior to bringing suit. Since the Union machines use the claimed invention of the patent in suit, it

seems unimportant as to how Talon acquired its knowledge of the infringement. This is not a case of malicious prosecution.

Argument.

The trial court correctly found that there was no causal connection between Talon's actions and any damage to Union alleged in Union's counterclaim and dismissed the counterclaim. Union has not sustained the burden of showing that the finding of the trial court was erroneous and Union's appeal should be dismissed.

Union's brief confuses the rule of law relating to the proof required to show the *amount* of damage with the rule relating to the proof required to show the *fact* of damage. This court clearly pointed up the distinction in the recent case of *Flintkote Company v. Lysfjord* (C. A. 9, 1957), 246 F. 2d 368, as follows:

"We take it that the controlling rule today in seeking damages for loss of profits in anti-trust cases is that the plaintiff is required to establish with reasonable probability the existence of some causal connection between defendant's wrongful act and some loss of anticipated revenue. Once that has been accomplished, the jury will be permitted to 'make a just and reasonable estimate of the damage based on relevant data, and render its verdict accordingly.' *Bigelow v. RKO Radio Pictures, Inc.*, supra, 327 U. S. at page 264, 66 S. Ct. at page 580. The cases have drawn a distinction between the quantum of proof necessary to show the *fact* as distinguished from the *amount* of damage; the burden as to the former is the more stringent one. In other words, the *fact* of injury must first be shown before the jury is allowed to estimate the *amount* of damage." (P. 392.)

See:

Story Parchment Company v. Patterson Parchment Paper Co. (1930), 282 U. S. 555, 75 L. Ed. 544;

Chipleys, Inc. v. June Dairy Products Co. (D. C., D. N. J., 1953), 114 Fed. Supp. 129;

Ronson Patents Corp. v. Sparklets Devices (D. C., E. D. Mo., 1953), 112 Fed. Supp. 676.

The cases cited by Union are beside the point because they relate to the amount of damage and not to the fact of damage. Union's brief does not meet the issue. In this entire record Union complains of three activities of Talon which in some obscure fashion are alleged to have caused it damage.

The first of these activities is the granting by plaintiff to strangers to this record of quota licenses. It seems apparent, and was correctly found by the District Court, that a restrictive license granted to another (and a competitor of Union) could not adversely affect Union.

The second of these activities is the alleged appropriation by Talon of improvements stated to have been originated by Union. The answer to this is simply that all such improvements were incorporated into Union's machine subsequent to any access thereto by plaintiff (see pp. 56-61 of Talon's opening brief).

The last of these activities and the one upon which Union pins its hopes of establishing a connection between its losses and Talon's actions is the filing of the instant suit.

The patents owned by Talon are presumed to be valid, and Talon had a right under the patent laws to protect them against infringement. The institution of the suits

for patent infringement may not be condemned as a violation of the antitrust laws in the absence of persuasive evidence that the suits were sham and brought for the purpose of stifling competition. (*Cole v. Hughes Tool Company*, 215 F. 2d 924, 103 U. S. P. Q. 1; *Ronson Patents Corp. v. Sparklets Devices, Inc.*, 112 Fed. Supp. 676, 98 U. S. P. Q. 387, affd. 202 F. 2d 87, 96 U. S. P. Q. 201; *Dollac Corp. v. Margon Corp.*, 118 U. S. P. Q. 257, 273.)

The right of a patent owner to maintain appropriate suits for infringement without being adjudged guilty of a misuse of the patents is established by the patent laws. In 35 U. S. C. A. 271(d) it is provided:

“No patent owner otherwise entitled to relief for infringement or contributory infringement of a patent shall be denied relief or deemed guilty of misuse or illegal extension of the patent right by reason of his having done one or more of the following: * * * (3) sought to enforce his patent rights against infringement or contributory infringement.”

Union argued that filing the instant suit was not a single isolated act but was part of an illegal scheme directed against Union. No evidence supports this argument and it was disposed of long ago by the Supreme Court in the case of *Virtue v. Creamery Package Mfg. Co.*, 227 U. S. 8, 57 L. Ed. 393. The *Virtue v. Creamery* case was a treble damage action brought under the antitrust laws. Defendant had previously brought two concerted patent suits against plaintiffs and the same argument was presented. The Supreme Court said:

“The contention is that the bringing of those suits was not a single and isolated act, but was a part of the more comprehensive plan and scheme to secure

a monopoly in the United States of the business of making and selling creamery supplies, * * *. Patents would be of little value if infringers of them could not be notified of the consequences of infringement, or proceeded against in the courts. Such action, considered by itself, cannot be said to be illegal. Patent rights, it is true, may be asserted in malicious prosecutions, as other rights, or asserted rights, may be. But this is not an action for malicious prosecution. It is an action under the Sherman antitrust act for the violation of the provisions of that act, seeking treble damages. * * * The testimony shows that no wrong whatever was committed by the Owatonna Company, and the fact that it failed in its suit against plaintiffs does not convict it of any." (227 U. S. 38, 57 L. Ed. 406.)

There are no cases including the *Kobe* case which support the proposition put forward by Union. The activities for which the court penalized Kobe were the related activities of Kobe which used the fact that a patent infringement suit had been filed against Dempsey to bring Dempsey's business to a standstill. Dempsey could not sell its pumps because Kobe circularized the trade and frightened it away from Dempsey. In other words, it was the use of the fact that a lawsuit had been filed that damaged Dempsey, not the lawsuit itself. In this case, there was no circularizing of the trade or similar activities calculated to deprive Union of business.

Thus Union's complaint against Talon boils down to a mere assertion that the filing of the instant lawsuit is the act of Talon which injured it, giving rise to its claim for damages. There is no case in the books, including the *Kobe* case, which would sanction recovery by Union under these circumstances. As pointed out above, the

Kobe case did not rest on the mere institution and prosecution of the patent infringement case. In fact, the Court in discussing this point stated at 198 F. 2d, page 425:

“We have no doubt that if there was nothing more than the bringing of the infringement action, resulting damages could not be recovered, but that is not the case.”

To rule otherwise would be to effectively close the courts to patent owners and face every unsuccessful plaintiff in a patent infringement case with a possibility of incurring trebled damages. Such access to the courts is protected by law.

Virtue v. Creamery Package Co. (1912), 227 U. S. 8, 57 L. Ed. 393;

International Visible Systems Corp. v. Remington-Rand, Inc. (C. A. 6, 1933), 65 F. 2d 540;

Straus v. Victor Talking Machine Co. (C. A. 2, 1924), 297 Fed. 791.

Union's brief is nothing more or less than a rehash of portions of its argument before the trial court coupled with the second thoughts of its newly-appointed counsel on appeal. Union has not pointed to a single act of Talon which could in any way have affected its business or property other than the filing of this lawsuit. Union's history is simply that of an unsuccessful business and nothing by way of evidence in the record or in its offer of proof or otherwise shows Union's lack of success to have been caused by Talon's activities. This is simply another instance of a successful defendant in a patent infringement suit whose counterclaim under the antitrust laws failed for failure to prove damages. (*Hunter Douglas Corp. v. Lando Products*, 235 F. 2d 631.)

Further Answer to Union's Brief.

After Union had been given every opportunity to show the fact of damage and failed, the court properly rejected the evidence as to the losses of Union because this evidence was directed to the amount or extent of damage. Obviously if the fact of damage could not be proved, there was no point in going into the amount of damage.

This procedure was specifically approved by this court in the *Flintkote v. Lysfjord* case, *supra*, in which it said that the fact of injury must first be shown before the jury is allowed to estimate the amount of damage. (246 F. 2d 392.) Since Union had not shown the fact of injury, its evidence as to the amount of damage was properly excluded.

The District Court did not reject Union's evidence regarding the fact of damage. The only evidence rejected was that relating to the amount of damage. There is no substance to parts 2 and 3, pages 20-22, of Union's argument because they are based on the assumption that evidence to the fact of damage was excluded, which is not true, and confuse the degree of proof as to the fact of damage with the degree of proof as to the amount of damage.

The only other point in Union's brief requiring answer is item b, page 19, in which Union states that Talon sold its zipper at less than cost. There is absolutely no support for this proposition. The price of Talon's "Wilzip" zipper was admittedly under its first line zippers, but it was not less than cost as Talon could establish had it been in issue. There was no allegation that Wilzip was sold at less than cost and no evidence was introduced tending to support such a statement. Once the fact

that Wilzip zippers were never sold at less than cost is accepted, as it must be, the remainder of Union's argument collapses. There is nothing wrong with respect to Talon's introduction of the Wilzip zipper. Of equal importance, it had no effect on the West Coast and could not have damaged Union. Union's president, Lipson, so testified [R. 917].

Talon met competitive prices but did not undersell anyone. Its zipper prices historically have been above competitive prices because of the quality of its product.

Conclusion.

The only question on appeal is whether the trial court committed an error when, after assessing the evidence introduced by Union, it decided that there was no causal connection between Talon's actions and damage to Union and dismissed the counterclaim. The decision of the District Court is correct and should be affirmed for the reasons given herein.

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IN THE
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Civil Action—No. 15714.
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Appellee.

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UNION SLIDE FASTENER, INC.,
Appellant,

v.

TALON, INC.,
Appellee.

**ANSWERING BRIEF FOR UNION,
DEFENDANT-APPELLEE.**

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PAUL P. O'NEIL, CLERK

SUBJECT INDEX.

	PAGE
A. STATEMENT OF THE CASE.....	2
B. THE SILBERMAN PATENT IN SUIT IS AN UNPATENT- ABLE AGGREGATION OF OLD ELEMENTS.....	7
1. The art prior to Silberman.....	8
C. THE CLAIMS ARE NOT INFRINGED.....	14
D. TALON IS ESTOPPED FROM ASSERTING THE SILBER- MAN PATENT AGAINST UNION AND UNION IS LICENSED THEREUNDER	18
E. THE AWARD OF COUNSEL FEES IS REASONABLE.....	18
CONCLUSION	20
APPENDIX I.	

TABLE OF CASES.

	PAGE
<i>Aeration Processes, Inc. v. Walter Kidde & Co. Inc.</i> , 177 Fed. 2d 772 (2nd Cir. 1949).....	19
<i>Blanc v. Spartan Tool Co.</i> , 7th Cir. 168 Fed. 2d 296	19
<i>Conmar v. Lamar</i> , C. A. No. 9-197 filed June 12, 1940, (USDC-SDNY)	4, 6, 15, 16
<i>Corn-Planter Patent</i> , 90 U. S. 181, 224.....	7
<i>Great A. & P. Tea Co. v. Supermarket Equipment Corp.</i> , 340 U. S. 147, 152.....	14
<i>Kwikset Locks, Inc. v. Hillgren</i> , 9th Cir., 210 Fed. 2d 483	13
<i>Photochart et al. v. Photo Patrol Inc. et al.</i> , 9 Cir., 189 Fed. 2d 625.....	7, 13
<i>Richards v. Chase</i> , 159 U. S. 477, 486.....	7
<i>Standard Oil Development Co. v. Marzall</i> , CA, D. C. 181 Fed. 2d 280.....	18

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Civil Action.
No. 15714.

**ANSWERING BRIEF FOR UNION,
DEFENDANT-APPELLEE.**

This cause is before the Court upon cross appeals by the plaintiff, Talon, Inc. hereinafter referred to as "Talon" and by the defendant, Union Slide Fastener, Inc. hereinafter referred to as "Union". Both parties appeal from a judgment entered May 31, 1957 in the District Court for the Southern District of California upon a memorandum to counsel and findings of fact and conclusions of law (Carter, J.). Union appeals from that portion of the judgment dismissing defendant's counterclaim under the anti-trust laws for failure to demonstrate damages accruing from Talon's acts; Union has already filed a brief regarding its appeal from that portion of the judgment dismissing the counterclaim under the anti-trust laws.

Talon appeals from that portion of the judgment dismissing Talon's complaint and awarding Union counsel fees in the amount of \$20,000. In particular, Talon has appealed from judgment adverse to two patents, Poux 2,078,017 and Silberman, No. 2,437,793. Talon, after such

adverse judgment, now withdraws its appeal as to Poux '017. This brief is by Union as appellee in answer to Talon's opening brief.

A. Statement of the Case.

Talon's brief is remarkably silent as to the history and background of its lone remaining patent No. 2,437,793 to Silberman, hereinafter referred to as '793. The facts and state of the art surrounding the application for the Silberman patent and the extrinsic facts relating to the purchase of Silberman's patent by Talon are of great pertinence to the present issues.

Silberman '793 relates to an apparatus for the manufacture of the zipper chain employing so called "progressive" (R. 331) punches and dies. Zipper chain comprises the cloth tape and the series of small, attached horseshoe shaped elements that are the engaging parts of the zipper, as it is commonly utilized (Ex. AX, AY). Silberman lays no claim to any new principle or method of operation in his patent.

In March, 1916, Gideon Sundback applied for a patent on a sheet metal forming and setting machine. This machine was a multistep affair, which first formed the little horseshoe zipper elements in a progressive die punch-press and secondly then attached the elements to beaded zipper tape (R. 508, 996, 496).

The resulting patent 1,331,884 (Ex. E) described for the first time a machine in which individual forming and handling of preformed zipper elements was eliminated. Attaching and spacing of the zipper elements on the tape required no special extra machinery.

Though the Sundback machine was a considerable advance in the zipper art, manufacturing was still slow and remained expensive because highly trained labor was required to use it (R. 206). Hookless Fastener Corporation as Talon was formerly known (R. 449, 558), the assignee of the Sundback patents, used these '884 machines (R. 206) and with some improvements (as shown in Sundback patent

1,467,015) still uses such multistep machines in some operations (R. 208).

Subsequently, Noel Poux who had been an employee of Talon, in 1931 applied for patent 2,078,017. The assigned '017 application was ultimately issued to Talon (R. 558), was held invalid by the District Court (R. 193), and is now repudiated by Talon. Poux '017 showed an alleged improvement over Sundback's machine by combining the various steps of forming the element and applying it to the zipper tape. In Poux '017 the element was clamped to the tape by jaws applying pressure directly to the zipper element while it is still attached to the strip of metal from which it was being punched (R. 253). Poux then showed a subsequent severing operation, separating the now attached element from the stock (R. 253).

The machine described in the Poux '017 patent left the zipper world unshaken, as it was never used by anyone, not even Talon (R. 469, 602). The patent itself, however, performed admirably and was used by Talon for years as a club to implement its schemes of monopoly as described in Union's brief on the anti-trust matter already filed. In the late thirties and early forties, Talon continued to use the rapidly antiquating Sundback methods (R. 208), meanwhile forcing licenses on the industry under the now repudiated Poux patent (Exs. S, T, U, V, W, X, Y, AA, AB, AC, AD, AE, AF, AG, AG-1, 11, R. 586-600). New developments toward speed and efficiency were being made by Conmar Mfg. Co. These developments covered by patents to Ulrich 2,221,740 (Ex. F), Wintritz 2,201,068 (Ex. L), Wintriss 2,336,662 (Ex. BG), Ulrich 2,370,380 (Ex. BH), Ulrich 2,320,075 (Ex. BU) and Ulrich 2,338,884 (Ex. BV) were for machines which formed and activated in tandem—one machine coining and forming round wire into serrated, recessed "embryo" elements, the second machine rapidly attaching the coined elements as they came off the coining machine (Ex. L). As Union pointed out in its own opening brief, Talon asserted the Poux patent against Conmar and induced Conmar to license under the now repudiated Poux patent in what Union asserts is an illegal quota license (Ex. 11).

The success of Conmar's method signalled the entrance of David Silberman who, it was judicially construed, "pirated" the Conmar machines (R. 92 Interrogatory 102, R. 540, R. 1004) and was ultimately enjoined. *Conmar v. Lamar*, C. A. No. 9-197 filed June 12, 1940, (USDC-SDNY). Silberman, seeing the end of his piracy of Conmar's method, proceeded to develop a machine (R. 1025), the '793 patent, which Havekost, Silberman's designer said was Havekost's own invention (R. 1508). In September of 1944, Silberman proceeded to apply for what ultimately issued as the '793 patent here in suit.

The Silberman application was filed one month later than the application of one Sigmund Loew, but issued five months earlier, in March, 1948. The Loew patent 2,444,706 (Ex. O) issued in July, 1948. The position of the Loew patent was the source of much controversy in the District Court. The Loew application also related to a slide fastener machine (Ex. O) and embodied combinations found in the prior art. It was, however, the first machine to employ a string of metal stock timed to move with a moving tape, where the movement of the stock and tape is synchronized with a punching operation of progressive dies and the element formed as a result is attached to the tape with closing jaws closing directly on the element at about the same moment that the finished element is severed from the stock, in which a so-called "square-shouldered" zipper element (R. 780, 950) is the final product (R. 946-950).

In 1946, Loew, finding it difficult to obtain materials because of wartime shortages in Canada, went to California and formed Union (R. 1419-1420), the defendant here. In 1947, Philip Lipson (R. 710), the present president of Union, joined Loew, in effect, as a "partner" in Union (R. 885, 1398). Lipson, a skilled mechanic, worked to improve the operation of Loew's machine and finally went abroad to sell the resultant product (R. 875). In England, Lipson learned for the first time of the issuance of the Silberman patent (R. 872) and on Lipson's subsequent return to California in August, 1948, Silberman called Union and arranged a meeting at the Hollywood Roosevelt Hotel (R.

871-878, 1398-1404). Silberman and Loew engaged in a discussion which ultimately resulted in admissions by Silberman that this patent could not "hold water" (R. 874, 880, 1403, 1416, 1423). Silberman was apparently disturbed by Lipson's appearance with Loew's machine in Europe as it appears that Silberman had received \$650,000 (R. 873) for a royalty agreement on the Silberman machine in Europe and felt threatened by the appearance of a similar machine (R. 873-874, 1398-1403). The record is without dispute that Silberman stated that his primary interest in promoting his patent lay in Europe and that he was unconcerned about Union's manufacture of the Loew machine in the United States or South America and offering to refrain from making claims against Union if Union would refrain from European sales (R. 875, 1400, 1423).

Loew, called by Union as a witness, proved to be hostile, having been engaged in an internecine legal battle with Lipson (R. 964). Despite his hostility, Loew's testimony bears out phrase for phrase, Lipson's version of the resulting understanding with Silberman (R. 871-878, 1398-1404, 1416, 1423). Thus, Loew testified that Silberman said "You know, both are patents which will not hold water" (R. 1416, 1423), whereas Lipson testified that Silberman said "You know, my patent will not hold water" (R. 874, 880), clearly, an admission against Silberman's interest. Loew testified that there was talk of infringement suits, that Silberman stated clearly that (Silberman) did not care what Union did with their machines as long as they did not sell them in Europe (R. 1398-1403). While Loew goes on to say that no agreement was reached *vis-a-vis* the withholding of infringement actions if Union made no further efforts to sell their machines in Europe (R. 1401), the testimony permits no other inference (R. 878-892, 1402-1403). Thereafter, neither Union, Loew nor Lipson sold Union machines in Europe, although an offer to buy five was subsequently received from Nagele in Germany (R. 890, 878-892, 1402-1403).

Talon, meanwhile, did not remain idle. It suddenly decided in early 1948 to correspond with Union charging infringement of their patents (R. 899). In regard to this, Talon arranged for the visit in April of 1948, of one of their officers, one McKee, to Union (R. 901-903, 1405-1410). McKee, in the company of Loew whom he had previously contacted, was shown through Union's plant (R. 901, 902, 1404, 1405, 1411). At the end of the tour, McKee and Loew discussed the result of McKee's inspection in an adjoining office within Lipson's earshot (R. 901, 902, 1411, 1412). The District Court, in its assay of the testimony, believed Lipson's statement that McKee admitted that there was no infringement of Talon's patents (R. 901, 902) and found as a fact that Talon was estopped from asserting infringement as a result of these admissions (Finding XXIII, R. 182). McKee's report to Talon of his visit to Union substantiates this as no inference of patent infringement by Union can be drawn (Ex. 14, R. 572, 574).

Soon after McKee returned, Talon without further investigation and knowing full well Silberman's reputation as "an industrial pirate" (Woolsey, J. in *Conmar v. Lamar supra*), purchased an option on the Silberman '793 and just before commencement of this suit exercised the option (Ex. 8, R. 458). A meeting was held in Los Angeles, the details of which are fully recounted in Union's opening brief in its cross appeal. It suffices to say here that Union would not agree to become part of a proposed price fixing conspiracy. Within a matter of weeks, Union's plant was burglarized and fired, with the burglars singling out blue prints covering the latest innovations in chain machine design developed by Lipson (R. 954, 955). These same innovations, some of which were developed after Talon's McKee had visited Union, quite miraculously appeared in Talon's Exhibit 5 (Finding XI, R. 191, R. 723-728, 734, 739, 820-844). Exhibit 5 purported to be a machine built in accordance with Silberman's '793 patent, but was, in fact, a Chinese copy of Union's Loew machine.

The climax of all this is the subsequent filing of Talon's present suit against Union.

B. The Silberman Patent in Suit is an Unpatentable Aggregation of Old Elements.

The Silberman patent is an unpropitious collection of old and well-known devices, each performing exactly the same function as it always has done, and is even less of an inventive nature than the patent invalidated by this Court in *Photochart et al. v. Photo Patrol Inc. et al.*, 9 Cir., 189 Fed. 2d 625. The Silberman patent describes a punch press for forming and attaching zipper elements to zipper tape. The punch press arrangement employs a strip of metal, forming it into the shape of a zipper element and by the use of a pair of jaws, squeezes the element in the same operation onto the appropriate portion of an adjacent zipper tape. The operation is repeated and elements are thereupon serially placed upon the zipper tape.

The Silberman patent claims in suit are purportedly for combinations and therefore must depend for validity upon the patentability of the concept of combining—not upon the novelty of any elements of the claim which are presumed to be old. Such combinations have long been construed by the courts.

Thus:

The Corn-Planter Patent, 90 U. S. 181, 224:

“Where a patentee, after describing a machine, claims as his invention a certain combination of elements, or a certain device, or part of the machine, this is an implied declaration, as conclusive, so far as that patent is concerned, as if it were expressed, that the specific combination or thing claimed is the only part which the patentee regards as new.”

Richards v. Chase, 159 U. S. 477, 486:

“There is clearly no novelty in the individual steps of this transfer. Indeed, the failure to claim either one of the elements separately raises a presumption that no one of them is novel.

The novelty, then, must be in the combination, which differs from the combination of an ordinary elevator only in the omission of the storage features by which grain is housed in transit, and its identity lost.”

The District Court found that the alleged Silberman invention was unpatentable as a combination of old features saying (Rec. 135):

“A mere inspection of plaintiff’s own charts, as to Silberman ’793, Exs. 20 and 21, will show that every element in Silberman was present in the prior art. However, even the charts are misleading, in that Talon’s expert witness admitted that the charts were not strictly correct.”

1. The art prior to Silberman.

Speaking of the art prior to Silberman’s aggregation, the Court said (Rec. 131):

“The field concerning the zipper art is a crowded one. The basic and generic patent is not Poux ’017. Probably Sundback 1,331,884 made the greatest contribution. Most present manufacturers lean on Sundback ’884. Naegle and others had taught how to make zipper units which were subsequently placed on the tape in another operation. Sundback ’884 made great steps forward toward the solution of (325) the problem of doing the whole job in one operation. The court generally agrees with Lipson’s analysis, pp. 27-49 of his brief.

“Other contributions were:

Johnson	1,731,667
Binns	2,026,413
Smith	1,533,352
Legat	2,116,726
Ulrich	2,221,740, 2,302,075, 2,370,380 and 2,338,884.

Although Talon complains that a “multiplicity of patents” are cited against its Silberman patent (Plaintiff’s brief, p. 40), Talon’s complaint is exaggerated.

The fact is, as Talon knows all too well, the Sundback patent (R. 1723) which Talon used to dominate the zipper field for many years, contains every element to be found in the purported Silberman invention. For example, a study of claim 40 which Talon has “explained” in such colorful, if inaccurate, illustration in its brief, disclosed that

each and every element affirmatively recited in plaintiff's claims can be found in Sundback '884 reference, not cited in the Patent Office file history. Thus, the following comparison can be made:

Silberman Claim 40	Sundback '884
1. A base	Fig. 10
2. A ram movable with relation to the base.....	Fig. 10; 16
3. Means for feeding a substantially uniform metallic strip between the ram and the base	Figs. 1 & 4; 3, page 2, lines 16 to 30
4. Means for feeding a tape in a fixed path past the end of the fed strip.....	Figs. 11, 12 & 17:63, 66; page 3, lines 91 to 118
5. The ram and the base having complementary means for forming and separating a slide fastener element from the fed strip	Fig. 3 & 4:22, 23; page 2, lines 41 to 56
6. A pair of jaws on the base, immediately at the position of the separating means, the jaws being disposed on either side of the tape and being slidable toward each other for engaging and closing the element upon the edge of the tape as it is separated from the strip..	Fig. 3, 19:46; page 3, lines 33 to 47

Silberman Claim 40

Sundback

- | | |
|---|---|
| 7. And means on the ram for engaging to drive them into engagement with the element to close it upon the edge of the tape | Figs. 2 & 3:47, 48, 49, 50, 51, 52; page 3, lines 47 to 53 |
| 8. The jaws and the jaw engaging means having cam faces for direct engagement..... | Fig. 2:47 & 48; page 3, lines 47 to 53 <i>are equivalent.</i> |

There is *no* difference in this catalogue of elements; only the final functional statement regarding the "jaw and jaw engaging means having cam faces for direct engagement" offers Talon any comfort. The use of cams to actuate clamping jaws on zipper chain machines, however, is certainly old, being clearly shown in the patent to Taberlet (R. 1836), U. S. Patent 2,294,253. Taberlet in Fig. 1 of this patent shows cams 51, actuating arms 52, to operate clamping jaws 49.

Talon's opening brief does not attempt to argue that any new element is to be found in the Silberman disclosure (Plff's brief, p. 30); Talon's expert Doble admitted this state of affairs (Rec. 1078, 9). Talon instead, now retreats to a foxy argument, the gist of which appears to be that some new and different *function* results from the fact that the element is held "under complete control while it is being clamped on the tape." This, Talon urges to be a new "cooperative relationship" purportedly not found in the prior art. It is not found in the Silberman patent, either, never having been claimed or specified. The consistently tardy nature of Talon's position *vis-a-vis* patentability was recognized by the District Court:

"In both file wrappers, the arguments advanced by the applicant to show patentability over the

references, in many cases have little or no relationship to the contentions made at the trial by the plaintiffs in urging validity of the claims" (Rec. 136).

It is plain beyond question that the only difference between Sundback '884 and the Silberman patent in suit is the fact that Sundback machine employs an additional intermediate step between the formation of the zipper element and its attachment to the tape. Talon's brief urges that two advantages result from the elimination of this step; that it makes a Silberman type machine inexpensive and secondly, that the machine will operate at high speed. Other than the testimony reproduced on page 31 of Talon's opening brief, by its discredited (Rec. 1055, 6 *et seq.*) witness Doble that such a machine would be inexpensive, the record is devoid of any factual showing of what the Silberman machine would cost in comparison with any other machine. Regarding the allegation that the Silberman machine is faster than earlier machines, the principal testimony is that of Burkitt who, it is to be remembered, had appeared as counsel for Talon in the present litigation. It was his testimony that the Silberman machine was capable of operating "between 2000 and 2500 rpm" (Rec. 1041). There is other testimony that metal expansion causes the rams to freeze at much lower speeds (Rec. 739). It was apparent to the District Court that the extravagant claims made on behalf of Silberman's machine were untrue and that Talon was forced to exhibit a false Silberman machine (Ex. 5) for what it claimed to be a machine built according to the Silberman patent (Rec. 177). There is, in fact, no testimony whatsoever that Talon ever employed a machine built strictly in accordance with the Silberman patent, nor was any such machine offered or shown by Talon at the trial.

Talon's new explanation of the unexpected result allegedly obtained by forming and attaching the zipper elements simultaneously, are furthermore fully shown in the prior art. Thus, the patent to Smith (Rec. 1760), No. 1,533,352, although in an allied art, disclosed a progressive

punch-press method wherein an element integral to a strip of stock was manufactured without wastage and severed and attached simultaneously to the desired element in a manner exactly as Silberman describes.

The use of the strip itself to support zipper elements in attaching and spacing is shown clearly in the Johnson patent (Rec. 1765), No. 1,731,667. Johnson discloses an integral strip of elements whose integrity act as a handle for attaching and spacing the elements to the tape. Without unduly burdening this brief with lengthy cumulative citation of prior art, these patents show, if indeed anything need be shown, that the purported "new result" offered by Talon in its argument for patentability of Silberman are in fact an aggregation of old concepts, well known to all.

What then, does Talon say about the prior art. Page 40 *et seq.* of Talon's brief, lightheartedly dismisses Sundback '884 by having us "imagine" what would happen if the Sundback machine was speeded up. Page 41 of the brief finds Talon urging the great advance offered by Silberman's "vise-like grip during severing and attaching." Strong words, indeed, but what do they mean? Nothing apparently, as Silberman's patent says in col. 15, lines 14-23:

"It has been found desirable that the operation of clamping jaws 466 to the tape edge be completed substantially before the cutting off step proceeds. In this manner, when the legs of the element have been clamped upon the tape edge, *there is no necessity for controlling that element by holding it by any part of the machine during the stages of cutting off, as the element remains firmly attached to the tape.*"*

As to the remaining prior art patents, these are discussed on pages 42 *et seq.* of Talon's opening brief and are apparently dismissed on the grounds that they are, at least in Talon's view, "irrelevant", or "no wise pertinent."

Perhaps special mention should be made of Behrens (Rec. 1947) 2,267,783, which caused the cancellation of certain claims in the application for the patent. Talon now urges that Behrens is inoperative or that evil things may

* Emphasis except where noted to the contrary, is ours.

happen to the element if certain events should occur. It does not, however, state how Behrens fails to show each of the elements of the Silberman machine and why it was necessary to cancel claims as a result of its introduction into the Patent Office records.

As observed, the Silberman patent claims are purportedly combinations. Where a patentable invention, if it is present, is predicated upon the use of the various elements together and as such are subject to rules long established by the courts dealing with such patents. Thus, this Court in *Photochart v. Photo Patrol*, *supra*, said:

“It is not contended that the patent in suit contains any new or different element not existing in the prior art. If its validity is to be upheld it must be on the theory that the del Riccio method is a combination of old elements, constitutes invention and when it is within the mechanical skill of one working in the art. The most recent opinion of the Supreme Court on combination patents expresses the view that, ‘courts should scrutinize combination patent claims with a care proportioned to the difficulty and improbability of finding invention in an assembly of old elements.’ *Great Atlantic & Pacific Tea Co. v. Supermarket Equipment Corp.*, 340 U. S. 147 (87 USPQ 303, 306). The test to be applied to such patents is that the combination must perform some new or different function—one that has *unusual* or *surprising* consequences. It is our view that the patent in suit fails to meet this *severe* test and does not constitute invention. The most that can be said for the patent in suit is that it rearranges the elements of the slit camera in such a manner that in the performance of their respective functions a higher degree of accuracy is obtained. But *perfection of workmanship, however useful or convenient, does not constitute invention . . .*”

This position is again enunciated in *Kwikset Locks, Inc. v. Hillgren*, 9th Cir., 210 Fed. 2d 483, where it is said:

“There is no invention of a ‘mere *aggregation* of a number of old parts or elements’, nor is the *accumulation* of old devices which do not in some way exceed ‘the sum of its parts’. (Emphasis ours).”

* In this case, emphasis is supplied by the Court.

“Moreover, a truly inventive combination must create what had not before existed or bring to light what lay hidden from vision in a way which can be distinguished from ‘simple mechanical skill’. *A mere advance in efficiency and utility is not enough to convert a non-inventive aggregation into a patentable combination.*”

In *Great A. & P. Tea Co. v. Supermarket Equipment Corp.*, 340 U. S. 147, 152, the Court invalidated a combination patent, stating that it was “wanting in any unusual or surprising consequences from the unification of the elements here concerned” and that there was no finding “that old elements which made up this device perform any additional or different function in the combination than they perform out of it”. And also:

“Courts should scrutinize combination patent claims with a care proportioned to the difficulty and improbability of finding invention in an assembly of old elements. The function of a patent is to add to the sum of useful knowledge. Patents cannot be sustained when, on the contrary, their effect is to subtract from former resources freely available to skilled artisans. A patent for a combination which only unites old elements with no change in their respective functions, such as is presented here, obviously withdraws what already is known into the field of its monopoly and diminishes the resources available to skilful men. This patentee has added nothing to the total stock of knowledge, but has merely brought together segments of prior art and claims them in congregation as a monopoly.”

C. The Claims Are Not Infringed.

A. The Silberman patent covers, if anything, only what it describes and produces—certainly not the Union machine. The Union machine is different from the Silberman patent in many important respects. As the District Court said (Rec. 178), listing the following:

1. A different result is obtained. The square shouldered zipper produced by the accused machine dis-

tinguishes from Silberman's round shouldered zipper and serves a useful purpose in ease and efficiency in operation.

2. Silberman's round shouldered zipper element is formed with a burr on each side which must be removed and even then there is a roughness which interferes with smooth action of the slider which interlocks and disengages the complementary zipper elements on a pair of zipper tapes.

3. Defendant's accused machine produces a square shouldered zipper element which is stronger and more firmly grips the tapes and because it does not have burrs such as Silberman it operates more smoothly.

There are actually other portions of Union's accused's structure which are not within the ambit of Silberman's claims, but the round shouldered—square shouldered dispute thoroughly aired before the District Court is at the heart of the matter. To understand it, one must refer to the history of the Silberman patent.

When Silberman was found to be an "industrial pirate" by Judge Woolsey in *Conmar v. Lamar*, Burkitt, Talon's witness, here testified that Silberman was under an injunction in the *Conmar* case not to build any machines which could produce square shouldered zippers (Rec. 1026, 7). Burkitt testified that the use of a notched die was purposely avoided in the Silberman application because of the *Conmar* injunction (Rec. 1027).

Round shouldered elements are zipper elements whose sides in the plane parallel to the applied tape provide a curvature. Square shouldered elements have sides that are flat. Round shouldered elements are most easily seen in the Legat patent (Rec. 1968) No. 2,116,726, Fig. 13. Fig. 13 of Legat shows the sides P and P' with curvature and thus demonstrates a round shouldered zipper element.

The issue here is further confused because of the erroneous showing of the zipper elements in "plaintiff's structure," Fig. A of Plate 2 in Talon's appendix to their open-

ing brief.* It is noteworthy that Talon's Plate 2 of its appendix shows the portions of the jaws (18) making contact with the elements and squeezing them onto the tape (19) as square. Such a shape would make the zipper element a square-shouldered element as Talon inferentially tries to have the Court believe. The zipper elements attached to the tape in the upper portion of Plate 2 are square, for example. This is an incorrect showing as may easily be seen by reference to Figs. 66, 67 and 68 of the Silberman patent where clearly the jaws which force the element onto the tape are rounded and produce a round shouldered zipper. Although the Silberman patent's Fig. 69 attempts to show that this roundness is somehow removed, the evidence is clear that the Silberman machine if it worked, produce a round shouldered zipper. Thus, Talon's Burkitt (1026, 7) explained at length that as the solicitor of the Silberman patent and as Silberman's attorney it was his function to keep Silberman free from the injunction in the *Conmar* case by staying away from making square shouldered zippers.

To the contrary, the Union structure even as shown in Talon's Appendix, Plate 3, shows a notched die element, which when the element is forced by the jaws onto the tape will form a square side, the narrow section of the element operating as a hinge as it is forced or squeezed upon the tape.

It is clear then that Silberman relates to round-shouldered elements, Union to square shouldered elements.

Returning once more to Fig. 69 of the Silberman patent, Union urges that the showing of a square element in Fig. 69 is in fact a misleading and improper disclosure of how Silberman operates. In the Silberman drawing, Fig. 68, it is clear that the closing jaws leave a burr (554) on the zipper element. It is also clear that this burr appears to have vanished in a succeeding stage of the zipper element

* Union has included for the Court's guidance in Appendix I, a photostatic copy of portions of Talon's erroneous showings setting forth the incorrect representations contained therein.

shown in Fig. 69. Plan views Figs. 20 and 69 of the completed element show no irregularity or disfigurement on the sides of the element and therefore burr 554 must have extended across the zipper element shoulder. However, Fig. 20A showing the cross-section of the zipper shows no disfigurement from the burr in a vertical plane. The patent specification states that the "swaging" operation shown in Fig. 32 will remove the burr, but fails to state how the burr could be removed without displacing the metal in some direction. The District Court came to the conclusion that the burr in Silberman's round shouldered element remained present and interfered with the operation of zippers made on Silberman's machine.

Corollary to the round shouldered—square shouldered issues are the extensive statements in the Silberman patent that the described stamping operation leaves no waste and therefore saves material. Thus, the Silberman specification says on page 1, column 2, line 40:

" . . . a strip of metal is formed into the elements, and the elements are attached to the tape as a part of a continuous operation, where no scrap of any kind is produced, where all metal from the metallic strip is utilized in the production of the element, and where no incision is produced in the strip for the production of such elements."

It was plainly Silberman's intention to carry out this object as Plate 2 of Talon's brief Appendix discloses; it is this same utilization of metal that caused the round-shouldered effect of the element previously described. On the other hand, even Talon's Plate 3, as incorrect as it is, shows Union's structure having notches in the material which, while it introduces waste, at the same time permits the elements formed upon the tape to have square shoulders.

Doble, Talon's expert witness testified that waste material was a distinct disadvantage in chain making machines in that they were difficult to dispose of and caused fracture of the dies (Rec. 242). Presumably, Silberman alleviated this condition by using all of the metal

in the formation of the element but as stated, ran into further difficulties in the formation of burrs on the zipper element itself. On the other hand, Union's structure employs notching and waste, having in itself a new and different way of removing the waste by means of a vacuum, a distinct advance in the art.

In the light of the prior art, it is clear that Silberman's claims properly limited cannot possibly extend to a machine for manufacturing square shouldered zippers or to machines employing a notching die to form the zipper element.

D. Talon is estopped from asserting the Silberman patent against Union and Union is licensed thereunder.

The issues of estoppel and license decided by the District Court in favor of Union depended solely on the credibility of witnesses. The District Court believed Lipson and the testimony presented in Union's behalf. The court found that Talon is estopped by McKee's statements and its actions from asserting the Silberman '793 patent against Union and licensed by Silberman in the agreement reached in the Hollywood Roosevelt Hotel. Such findings, based on an assay of the facts and testimony, should not be reversed, *Standard Oil Development Co. v. Marzall*, CA, D. C. 181 Fed. 2d 280.

E. The award of counsel fees is reasonable.

Talon's brief boldly asserts that the instant case is the ordinary patent infringement suit where the plaintiff did not prevail. With even greater temerity, Talon blatantly announces that "defendant cannot point to a single piece of evidence which supports the finding of bad faith on behalf of plaintiff." (Talon brief, p. 76.) As a result, Talon argues, the award of counsel fees to Union by the District Court was unwarranted.

In the face of the record, these contentions by Talon can be construed only as a final and desperate display of bravado; they are clearly insulting.

Let the record speak for itself: the commencement of this action by Talon upon no further investigation after an inspection of defendant's machines by Grosvenor McKee, a Vice-President and director of Talon, had found no infringement (R. 572, 574, 901, 902); the pirating by Talon of improvements made by Union under the cloak of this inspection (Finding R. 191, R. 723-728, 734-739); Talon's failure to permit the adjudication of the patents in issue (R. 133, Finding XXXIX R. 185); admissions by Silberman that his patent would not stand up (R. 874, 880, 1403); Talon's weak opinion of five of the six patents upon which it brought suit as evidenced by its backing down on four of such patents at the time of trial (R. 1227), and now, a fifth, the infamous Poux patent; Talon's use of such invalid and questionable patents as a club to exact quote license agreements so obviously restrictive of the production of competitors (Findings R. 184, R. 649-680); the sudden economic pressure exerted against Union after the commencement of this litigation (R. 1623-1632); the mysterious fire and the unexplained theft at Union's premises in which the only items other than petty cash and stamps found missing were drawings and blue prints of the new designs and improvements on Union's machines (R. 1625). It was in the face of such evidence that the District Court found Talon guilty of misuse of patents and unclean hands (Finding XXXX, R. 185).

The award of counsel fees is commonly upheld on a far lesser showing of bad faith and inequitable conduct on the part of a plaintiff, than Talon's conduct in the instant case. See, e.g., *Aeration Processes, Inc. v. Walter Kidde & Co. Inc.*, 177 Fed. 2d 772 (2nd Cir. 1949) where it was held that reasonable attorneys fees were allowed to a defendant where the plaintiff abandoned one of its patents at the trial.

Finally, it is uniformly held that under the statute, the question of awarding attorneys fees is one within the discretion of the District Court. *Blanc v. Spartan Tool Co.*, 7th Cir. 168 Fed. 2d 296.

With regard to the amount of the award, it is necessary only to consider the preparation from 1949 to 1955, the time of trial, which was necessary to defend against the charged infringement of six patents, four of which were dropped from the case only at the pretrial conference, a fifth on appeal, a nine day trial, and the pages of depositions of the six witnesses whose testimony was submitted at the trial.

Conclusion.

For the foregoing reasons, this Court should affirm the decision of the District Court insofar as it (1) held the Silberman patent 2,437,793 invalid and not infringed, and (2) should sustain the Court's proper exercise of discretion awarded to Union attorneys' fees in the reasonable sum of \$20,000.

Respectfully submitted,

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PUNCH AND DIE AS SHOWN COULD NOT
PUNCH STRIP AS SHOWN

'793 PUNCH IS TWO
PIECE PUNCH

FIG. 67 '793 SHOWS
CURVATURE IN JAW
FORMING ROUND
SHOULDERED ZIPPER

PLATE 2
NO SIGN OF BURR
ELEMENT 554 '793 PATENT

PLATE 3
DIAGRAM DISTORTED TO GIVE
APPEARANCE OF SLIGHT ROUND
SHOULDERED ZIPPER

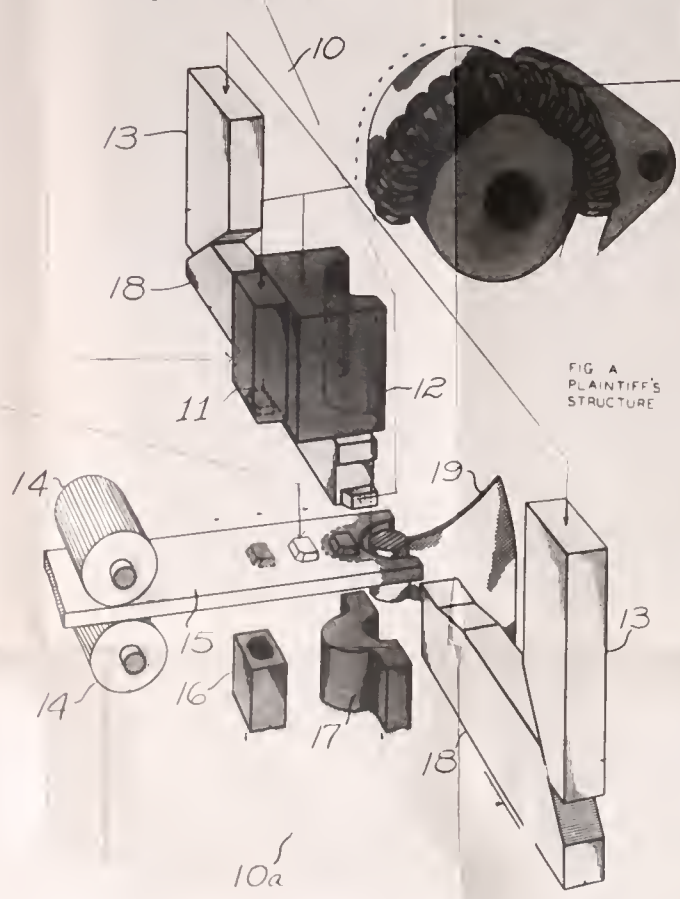


FIG A
PLAINTIFF'S
STRUCTURE

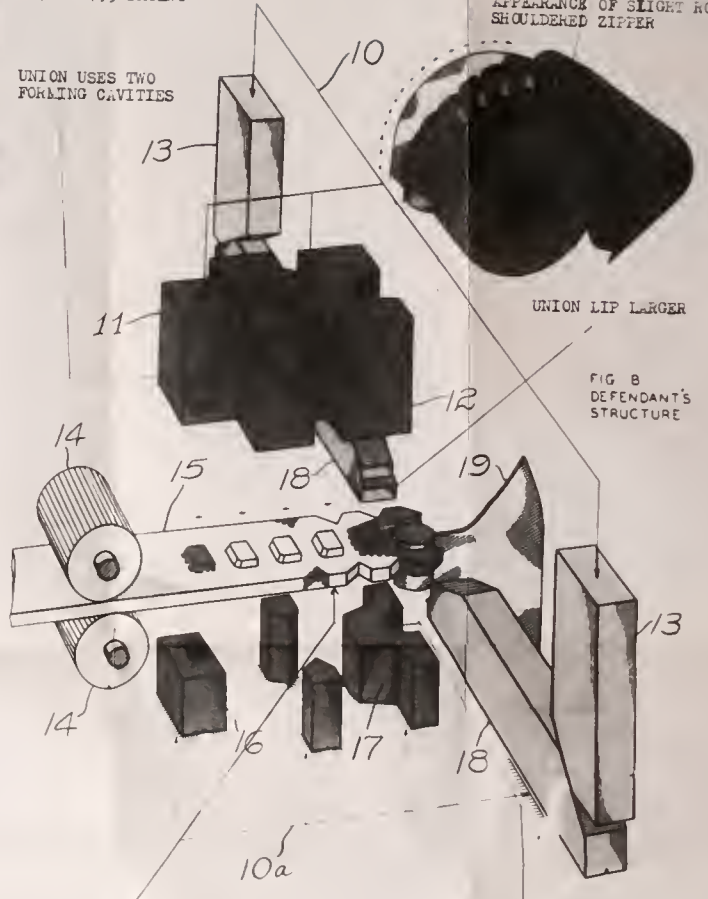


FIG B
DEFENDANT'S
STRUCTURE

UNION USES TWO
FORMING CAVITIES

UNION LIP LARGER

DISTANCE HERE DISPROPORTIONATELY
ENLARGED DISTORTING ELEMENT

LIMITED RECESS TO
PREVENT COLLAPSE OF WALL BETWEEN
RECESS AND WALL OF ELEMENT

No. 15714.

IN THE

United States Court of Appeals

FOR THE NINTH CIRCUIT

TALON, INC.,

Plaintiff-Appellant,

vs.

UNION SLIDE FASTENER, INC.,

Defendant-Appellee.

REPLY BRIEF OF PLAINTIFF-APPELLANT,
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TOPICAL INDEX

	PAGE
Validity of Silberman '793.....	2
The prior art.....	4
Infringement of Silberman.....	6
Estoppel to assert the Silberman patent.....	8
Union is not licensed under Silberman.....	9
Union's burglary and fire.....	9
Attorney's fees	11
Conclusion	13

TABLE OF AUTHORITIES CITED

CASES	PAGE
Byers Machine Co. v. Keystone Driller Co., 44 F. 2d 283.....	3
Deitel v. La Minuette Trading Co., 37 F. 2d 41.....	8
Dubil v. Rayford Camp & Co., 184 F. 2d 899.....	13
Gamble-Skogmo v. Paul E. Hawkinson Co., 98 F. 2d 37.....	3
ITS Rubber Co. v. Panther Rubber Mfg. Co., 260 Fed. 937....	4
Reinharts, Inc. v. Caterpillar Tractor Co., 84 F. 2d 628.....	8
Stearns v. Tinker & Razor, 220 F. 2d 49.....	4
Stromberg Motor Devices Co. v. Zenith Carburetor Co., 254 Fed. 68	3
Warren Steam Pump Co. v. Blake & Knowles Steam Pump Works, 163 Fed. 263.....	4
Western Electric Co. v. LaRue, 139 U. S. 601.....	7

No. 15714.

IN THE

United States Court of Appeals
FOR THE NINTH CIRCUIT

TALON, INC.,

Plaintiff-Appellant,

vs.

UNION SLIDE FASTENER, INC.,

Defendant-Appellee.

**REPLY BRIEF OF PLAINTIFF-APPELLANT,
TALON, INC.**

In our opening brief, we demonstrated the validity and infringement of the Silberman '793 Patent in suit and the lack of any license or estoppel or defense of misuse. The answering brief for Union does not answer any of the propositions of fact and law demonstrated by appellant to govern this case in our opening brief, and in leaving them unanswered greatly simplifies the issues. The only substantial issue now before this court is the validity of Silberman '793. We will show hereinafter the complete failure of the appellee to meet the issues thus raised by appellant's appeal and the departures from and distortions of the record to which appellee, Union Slide Fastener, has resorted.

Validity of Silberman '793.

The District Court made no finding that the claims in issue of Silberman are invalid or anticipated by the prior art or that the prior art shows the mode of operation or accomplishes the results of Silberman. Its Conclusion of Law II [R. 189] was that Silberman is an unpatentable aggregation and

“* * * The plaintiff's proofs failed on the issue that the machine of Silberman '793 ever operated.”

The fact basis for that conclusion being clearly erroneous as established by Union's President, Lipson, this conclusion must be reversed. Union has not challenged these controlling issues, and it now resorts to reargument of the prior art.

In our opening brief we demonstrated that the Silberman Patent discloses a new, additional and different function and cooperative relationship from any prior art machine and thus qualifies as a true combination. We challenged the defendant to show to this court any prior device which operates in the manner and performs the functions in the way of the Silberman Patent. This challenge remains uncalled. On pages 7 and 8 the defendant contents itself with stating that the Silberman Patent is an unpropitious collection of old and well-known devices, each performing exactly the same function as it always has done. It has made no analysis of the manner in which the various elements of the Silberman machine function and it has not produced any patent or other prior art device which performs the function we have claimed and demonstrated is inherent in Silberman.

The new cooperative relationship and the new and additional function of the Silberman device is stated at pages 30 and 31 of our opening brief and lies in the fact that the ram which forms the projections and recesses on the strip of metal while the end element is being clamped on the tape, also is the means which cuts off the endmost element as it actuates the closing jaws to attach the element to the tape which moves in a fixed path past the end of the strip. Thus the element is always under complete control while it is being clamped on the tape.

That this is the manner in which the Silberman machine functions is apparent to anyone reading the patent. Our attention has been called to no prior device or combination of devices which does perform or is capable of performing this function. On pages 10 and 11 of its answering brief, the defendant would appear to argue that the presence of this new cooperative relationship and new and different function cannot be relied upon by the plaintiff as it was allegedly not "claimed or specified." This is not the law.

A patentee is entitled to all of the advantages and to the benefit of every function actually possessed by his mechanism even if he does not note it at the time of patenting.

Byers Machine Co. v. Keystone Driller Co., 44 F. 2d 283, 284 (6 Cir.);

Stromberg Motor Devices Co. v. Zenith Carburetor Co., 254 Fed. 68 (7 Cir.);

Gamble-Skogmo v. Paul E. Hawkinson Co., 98 F. 2d 37 (8 Cir.).

Or as this rule is more often expressed in the First Circuit, the failure to state that there is a new mode of operation or new result does not prevent consideration of

the same and taking it into account in determining the scope and validity of a patent.

*Warren Steam Pump Co. v. Blake & Knowles
Steam Pump Works*, 163 Fed. 263 (1 Cir.);

ITS Rubber Co. v. Panther Rubber Mfg. Co., 260
Fed. 937 (1 Cir.).

Accordingly the defendant's failure to show to this court a patent capable of performing the new and different function or involving the new cooperative relationship of the Silberman Patent makes imperative the application by this court of the rule of *Stearns v. Tinker & Razor*, 220 F. 2d 49, cited at pages 33 and 34 of our opening brief, and the Silberman Patent must thus be held to be a valid combination patent.

The Prior Art.

On pages 8-10 of its answering brief, defendant attempts to apply the prior patent to Sundback No. 1,331,-884 to claim 40 of the Silberman Patent. It should be noted that the District Court did not rely upon Sundback '884 as an anticipation, and there is nothing in the record to support any such reliance.

On page 9 under numeral 6, defendant would have this court believe that figures 3 and 19 of Sundback indicate the presence of the element of the claim called for. This element of the claim listed under numeral 6 requires that the closing jaws of Silberman are "immediately at" the position of the separating means for "engaging" and closing the element on the edge of the tape "as it is separated from the strip." This is probably the most important element of the combination because it places the closing jaws and consequently the function of closing legs of the element on the tape immediately at the position of the

separating means. This is the cooperative relationship which assures that the element remains held in a vise-like grip and is an integral part of the fed strip until it is simultaneously cut from the strip and attached to the tape. The court's attention is invited to figure 19 of Sundback, page 1734 of the book of exhibits, and attention is called to the fact that the elements 35 have been cut out of the strip 1 and returned between the scrap edge strips left from the blank five stages in advance of the closing the jaws 46. Thus for the next four operations, the elements 35 are merely carried along with the scrap remaining from the strip and are no longer a part of the strip. After the jaws 46 are retracted, the tape is advanced to pull the cramped on element free from the scrap remaining from the strip.* Thus, if we follow defendant's arguments, the means for separating the element from the scrap is the feed for the tape and not complementary means on the ram and base for both forming and separating the element from the strip as in Silberman. Certainly Sundback's jaws 46 do not close the element on the edge of the tape as it is separated from the strip. Certainly, therefore, the element of Silberman claim 40, numbered 6 on page 9 of defendant's answering brief, is wholly absent from Sundback.

Turning to page 10 of defendant's answering brief, under the numeral 7, the defendant has misquoted claim 40 in that it had omitted the word "the jaws" after the word "engaging" in line 2. The reason for this is obvious as there is nothing "on the ram" of Sundback for "engaging and driving" the closing jaws "into engagement with" the element on the tape. Under numeral 8, the parts

*See page 2, lines 40-48 and page 3, lines 53-56 of the Sundback specification.

referred to are not equivalent. Thus the only patent which defendant has even half-heartedly attempted to assert as an anticipation of Silberman plainly fails to anticipate either verbally or in the sense that it is an equivalent as performing the same function in the same way to achieve the same result. It is immaterial that here and there in other patents casually mentioned certain elements of the Silberman claims may be individually found. Such elements, if old in the art, have been combined by Silberman in a new combination having a new function and a new cooperative relationship.

We cannot let defendant's misleading and inaccurate reference to Smith Patent No. 1,533,352 [R. 1760] pass unchallenged. It is strictly not true that this patent discloses a punch press method wherein an element integral to a strip of stock was severed and attached simultaneously. If the court will examine this patent, it will see that in the first place it is not even a zipper-making machine and in the second place a complete so-called fastener (see figure 3) is manufactured and severed from the strip prior to any attempt to affix it to anything. The patent states, page 2, lines 73-79: "The punching out of the tongue 11 separates the fasteners, *after which* the completed fasteners are clinched to the end walls of the paper box, either as a *subsequent* operation performed by the same die head or as an independent operation." The words "after" and "subsequent" certainly negative simultaneousness.

Infringement of Silberman.

On pages 14-18, defendant argues that it does not infringe the claims of the Silberman Patent for the reason that it makes square rather than round shouldered zipper elements. It is noted that while defendant reproduces the

plates 2 and 3 of the appendix 2 to our opening brief and makes some small and immaterial criticisms thereof, it in nowise argues that the elements of claim 40 cannot be applied as applied in appendix 2 to our opening brief. Thus, our statement in our opening brief to the effect that defendant does not deny that the claims of Silberman in suit apply to the accused devices remains unchallenged. Now, it is strictly immaterial whether the defendant uses an infringing machine to make round shouldered or square shouldered elements.

Neither the patent nor the claims are so limited. The patent says:

“The invention, however, is not intended to be restricted to any particular * * * product * * *” (Column 3, lines 24-26) and

“Many other changes could be effected in the particular device and product design(ed) * * * without substantially departing from the invention defined in the claims * * *” (Column 17, lines 54-59.)

There are two answers to defendant's argument. The first of these is that a defendant cannot appropriate another man's invention and add something thereto to perform an additional function and thus escape infringement. Thus, the adding of the V-shaped dies to notch the side of the strip so as to result in a square shouldered element does not avoid infringement, all of the elements of the Silberman Patent being retained and these notching elements merely added. See the authorities cited at page 55 of our opening brief. The second answer to defendant's argument is that a patentee is entitled to the benefit of every use to which his invention may be put whether he had it in mind or not. The leading case on this subject is *Western Electric Co. v. LaRue*, 139 U. S. 601 at

606, wherein the Supreme Court of the United States held that a patent on a telegraph key was infringed by using the same mechanism as a telegraph sounder. An oft-cited case on this point is *Deitel v. La Minnette Trading Co.*, 37 F. 2d 41 at 42 (2 Cir.), in which a patent on a savings bank was applied to use of the same structure for a vanity case, and this court most recently applied the rule in *Reinharts, Inc. v. Caterpillar Tractor Co.*, 84 F. 2d 628 (9 Cir.), wherein a device for converting a truck to a track laying vehicle was applied to a tractor. Thus if the mechanism of the Silberman Patent has been converted by the defendant as it apparently has to the production of square shouldered elements, this is merely a use of the Silberman invention to which the patentee is equally entitled and in nowise tends to negative infringement.

Estoppel to Assert the Silberman Patent.

We have pointed out in our opening brief that the facts do not support the holding of estoppel and that defendant's chief witness, Philip Lipson, admitted that he did not rely upon any alleged statement of Mr. McKee, but even if we accept the contrary and assume that because an officer of the plaintiff may have said that he saw no infringement of any patents of the plaintiffs, such estoppel could obviously not apply to a patent not then owned by the plaintiff. This is true as a matter of law and is not dependent upon any conflicting factual claims. Defendant has made no answer whatsoever to this controlling proposition. Talon did not own Silberman '793 at the date of McKee's visit to Union, and any estoppel arising from such visit cannot affect this after-acquired patent.

Union Is Not Licensed Under Silberman.

As we pointed out on pages 48-51 in our opening brief, a full reading of the testimony of the witnesses concerning the meeting of Silberman with Lipson and Loew at the Hollywood Roosevelt Hotel in August, 1948 shows simply that Mr. Silberman proposed a deal which was rejected by Mr. Loew, the President of Union Slide Fastener, and that Mr. Lipson proposed a counter-offer involving the sale of ten machines to Silberman which Silberman did not accept. If you believe Loew, no agreement was made. If you believe Lipson, the same conclusion is reached as he simply made a counter-offer himself. So, however the evidence is resolved and however the facts are determined, no agreement which could amount to a license can be spelled out and the defendant has not aided this court in any way by indicating its theory as to how such an agreement can be construed from the facts however taken.

Union's Burglary and Fire.

Union now abandons its charge that McKee of Talon acquired knowledge of improvements made by Lipson of Union one year before Lipson made any such improvements. Union now resorts to the fantastic inference that Talon burglarized Union's premises to acquire this information.

Defendant's brief though not actually coming right out and saying so infers that a burglary and arson perpetrated upon the premises of the Union Slide Fastener Company October 2, 1949, were perpetrated by the plaintiff or agents of the plaintiff. Such inferential charge is scandalous, has no support in the record and should be a sufficient basis for striking from the files defendant's entire brief.

Throughout this entire appeal, the defendant has been most reckless in departing from the record, distorting the record and misquoting the record. In its brief on the antitrust issues, the defendant has made a wholly baseless charge that the plaintiff has sold zippers below cost. In its present answering brief, defendant has misquoted claim 40 as pointed out above, and with respect to the alleged fire has distorted the only evidence in the record to give it a false and misleading appearance. Thus, on page 6 of defendant's answering brief, it is stated that the plant was burglarized and fired with the burglars "singling out blueprints covering the latest innovations in chain machine design developed by Lipson." Again, on page 19 of defendant's answering brief, defendant makes the bald statement that the only items, other than petty cash and stamps found missing, were drawings and blueprints of the new designs. To support this, the record contains only the following:

"They broke a lock on one of our drawing cabinets—I mean on our cabinet where we kept our blueprints and drawings and over half of our drawings and blueprints were missing and the place was set on fire.

"Q. Did those drawings relate, or any of them, relate to items which you had developed as improvements on your zipper manufacturing machinery? A. Yes." [R. 955.]

It is a clear distortion of the record to state that this testimony infers that only blueprints of the new designs were taken. Admittedly, Mr. Lipson filed an affidavit in support of defendant's motion for a new trial which makes such statement. But, of course, that affidavit must be disregarded on this appeal as forming no part of the record on the case in chief.

Defendant has not and cannot point out one item of evidence that would in any way connect the plaintiff or any agent of the plaintiff with defendant's burglary and arson. To recklessly infer as defendant does without a scintilla of proof that such acts are chargeable to plaintiff is simply scandalous, and were such charges positively made in an unprivileged document would undoubtedly result in both civil and criminal prosecution of the defendant for civil and criminal libel.

Attorneys' Fees.

On pages 75-77 of our opening brief, we have pointed out that this case is not a proper one for the award of attorneys' fees and that Findings XXXXIII, XXXXIV and XXXXV are clearly erroneous. Defendant has now stated on page 19 of its brief the facts which it believes sustain the award of attorneys' fees. Let us examine these facts one by one:

(a) The commencement of this action by Talon upon no further investigation after an inspection of defendant's machine by Mr. McKee had found no infringement: There is no evidence in this case that this suit was commenced by Talon without further investigation other than McKee's inspection. Mr. Lipson has testified as to the sale of machines to Loew and to Mexico [R. 928], and plaintiff had ample opportunity to inspect these.

(b) The pirating by Talon of improvements made by Union under the cloak of this inspection: We have pointed out in our opening brief that these improvements occurred in 1949 and the inspection in 1948, so this charge is obviously baseless.

(c) Talon's failure to permit the adjudication of the patents in issue: The answer to this is that Talon is

not afraid to fight (see litigated cases listed page 15 of our opening brief) and that the settlement of litigation is favored rather than frowned upon.

(d) Admissions by Silberman that his patent would not stand up: If such an admission were made, it would be merely the expression of an opinion on a matter of law by a layman binding upon no one.

(e) Talon's weak opinion of 5 of its 6 patents upon which suit was brought: The simplification of the issues in any lawsuit is a meritorious act and it is to be noted that 4 of the 6 patents were dismissed from the action as early as November 24, 1952, whereas the trial began March 1, 1955 [R. 99].

(f) The dismissal as to the Poux Patent '017: Certainly there is nothing improper in the plaintiff dropping its appeal as to a patent which has been held void for inoperativeness.

(g) The use of Talon's patents as a club to exact quota license agreements: The exacting of restrictive license agreements from strangers to the record and competitors of the defendant can in nowise have injured the defendant and can afford no basis for an award of money to the defendant.

(h) The sudden economic pressure asserted against Union after the commencement of this litigation: This allegation has no support in the record, the only reference referred to being an affidavit of Lipson filed upon his motion for a new trial as to the counterclaim only, and there is not one iota of evidence in the record showing any economic pressure by plaintiff against the defendant. Specifically, plaintiff has never interfered by notice or letter or otherwise to defendant's customers with defendant's sale of its products.

(i) And finally the mysterious fire: This has been dealt with above.

From the foregoing résumé of the alleged acts of the plaintiff which defendant relies upon as supporting the finding of bad faith on behalf of the plaintiff, it is at once apparent that none of them supports such findings, and as pointed out in our opening brief the findings relied upon are obviously clearly erroneous and the award of attorneys' fees should be reversed. In any event, under the rule of *Dubil v. Rayford Camp & Co.*, 184 F. 2d 899, which like this case, involved a nine-day trial of a patent case, the award of \$20,000 is clearly excessive.

Conclusion.

In conclusion it is submitted that by our opening brief, we have demonstrated the validity and infringement of the Silberman Patent and the lack of any defense of license, estoppel or misuse. We have shown that the findings of fact upon which these various defenses are based are clearly erroneous and constitute reversals on the part of the trial court of its conclusions when the evidence was fresh in mind. In its answering brief the defendant has shown no valid reason for challenging the conclusions reached in our opening brief and we have demonstrated the validity and infringement of the Silberman patent in suit, its invulnerability of attack based upon any of the prior art and particularly the Sundback '884 Patent and the lack of any license or estoppel. We reiterate our vehement objection to the scandalous innuendoes of the defendant inferentially without cause charging the plaintiff with arson and burglary, and we have shown that the record of this case is completely void of any ground for assessing any attorneys' fees against the

plaintiff let alone the obviously excessive \$20,000 fee awarded by the District Court.

Justice in this case demands a complete reversal of the District Court.

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IN THE
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Appellant,

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UNION SLIDE FASTENER, INC.,
Appellee.

UNION SLIDE FASTENER, INC.,
Appellant,

v.

TALON, INC.,
Appellee.

**REPLY BRIEF ON BEHALF OF APPELLANT,
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INDEX.

	PAGE
The Fact of Damage and Proof of Recovery.....	3
The Cases Cited by Talon Do Not Support Their Position	4
Conclusion	7

TABLE OF CASES.

<i>Bigelow v. RKO Radio Pictures</i> , 327 U. S. 251, 265, 66 S. Ct. 574.....	4
<i>Flintkote v. Lysfjord</i> , 246 F. 2nd 368 (9th Cir. 1957)..	6
<i>Hunter Douglas Corporation v. Lando Products</i> (235 F. 2nd 631).....	6
<i>Kobe v. Dempsey Pump Co. et al.</i> , 198 F. 2d 416 (10th Cir. 1952)	4, 5
<i>Mormand v. Universal Film Exchange</i> , 72 F. Supp. 469, affirmed, 172 F. 2d 37 (1st Cir.) 6 F. R. D. 409..	4
<i>Story Parchment Company v. Patterson Parchment Paper Co.</i> (282 U. S. 555).....	6

MISCELLANEOUS.

Green, Rationale of Proximate Cause, 132-141.....	4
Prosser, Torts, pp. 322-324.....	4
Smith, Legal Cause in Actions of Tort, 25 Harv. L. Rev. 149	4
Restatement, Torts, Sec. 431.....	4

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**REPLY BRIEF ON BEHALF OF APPELLANT,
UNION SLIDE FASTENER, INC.**

Talon's answering brief (yellow cover) is a shameless distortion of the record below. By the seductive use of italics (Talon answering brief, p. 2), it takes language used by Union (R. 1616) out of context and claims that Union admitted that it had full opportunity before the District Court to show damage resulting to it from the actions of Talon. Having thus distorted the record, Talon then argues that the District Court's failure to admit evidence or permit a new trial to show damage to Union (R. 1128-1132) resulting from Talon's violations of the anti-trust laws is not a proper issue for appeal.

While Talon's argument relies exclusively on what it chooses to style an "admission" by Union, actually there is not a shred of fact in support of Talon's position. The record is clear: in response to Union's offers of proof on

the matters not admitted into evidence, the Court concluded as follows (R. 1129):

“ . . . there is no causal connection shown, nor can any be shown, between what the loss is on the books for each fiscal year and any activities of the plaintiff in this action. . . .”

And, in response to Union’s request for an opportunity to present some law on the issue, the Court answered:

“No, I am not going to permit you to do that. I have taken some proof on attorney’s fees and expenses, and time . . . these other matters are pure speculation. It is highly speculative. From the facts of this case I can’t see how loss would be sustained by virtue of quota agreements entered with other manufacturers.”

A dialogue between the Court and Union’s counsel followed wherein the Court asked:

“Where is there any causal connection, proximate causal connection between these alleged loss of earnings of the defendant and any acts of the plaintiff?”

Mr. Mockabee answered:

“The filing of the suit and the requirement that the defendant withdraw a very considerable percentage of his working capital for the defense of this suit.”

As the District Court itself found, the suit against Union was part of a pattern of many suits brought by Talon against various defendants on invalid patents, where forced settlements resulted in quota agreements. As in all anti-trust situations the individual acts must be considered in the light of the whole, including, *inter alia*, the introduction of the less-than-cost Wilzip and Falcon zippers, the sudden economic pressure exerted against Union after the commencement of this litigation (R. 1623-1632), and the unex-

plained fire and theft at Union's premises (R. 1625). Talon's reckless legal action against Union is only the most recent link in its chain of activities to restrain trade. Union was all but put out of business by Talon's plan, as would have been clear from the record had the District Court not erred in refusing to allow evidence of the extent of Union's losses.

The Fact of Damage and Proof of Recovery.

Talon's answering brief makes much of an artificial distinction between the *fact* of damage and the *amount* of damage. This is distinction without a difference; how can a litigant establish the fact of damage apart from introducing evidence of such damage? Necessarily the same piece of such evidence has two inferences—

1. that Union has *in fact* been damaged, and
2. that Union has in fact been damaged *in a particular amount and to a particular extent*.

If by the *fact* of damage, Talon refers to a causal connection, one fails to see how a showing of causation can be made where a litigant cannot introduce evidence of damage. Certainly there is no rule that causation in the abstract must first be proved!

The criteria for recovery in treble damage anti-trust actions are well known; recovery is permissible where the claimant proves:

1. That the respondent has engaged in acts unlawful under the anti-trust laws;
2. That the claimant has had lower earnings than the earnings of:
 - a. his own prior record
 - b. a normal year
 - c. a comparable competitor

3. That the acts of defendants are the preponderant, dominant or substantial or, among the known factors, the most substantial factor in causing the loss.

4. Segregation and measurement of the causes of loss are impossible.

Mormand v. Universal Film Exchange, 72 F. Supp. 469, affirmed, 172 F. 2d 37 (1st Cir.) 6 F. R. D. 409, 421, citing *Bigelow v. RKO Radio Pictures*, 327 U. S. 251, 265, 66 S. Ct. 574; Restatement, Torts, Sec. 431; Prosser, Torts, pp. 322-324; Smith, Legal Cause in Actions of Tort, 25 Harv. L. Rev. 149; Green, Rationale of Proximate Cause, 132-141.

It is submitted that Talon's artificial distinctions should not cloud the fact that Union was improperly deprived of the opportunity to present proof from which a causal connection could be inferred.

The Cases Cited by Talon Do Not Support Their Position.

In its opening brief, Union has cited the case of *Kobe v. Dempsey Pump Co. et al.*, 198 F. 2d 416 (10th Cir. 1952) in support of the proposition that Talon's baseless litigation against Union is part of its illegal plan causing damage to Union. The Talon answering brief, consistent in its pattern of distortion, tears the language of the *Kobe* case out of context and concludes:

“. . . it was the use of the fact that a lawsuit had been filed that damaged Dempsey, not the lawsuit itself. In this case, there was no circularizing of the trade or similar activities calculated to deprive Union of business.” (Talon answering brief P. 13).

The record speaks of comparable pressures exerted against Union after the commencement of this litigation (R. 1623-1625), but Talon apparently chooses to miss the point of the *Kobe* case. On page 14 of its answering brief, Talon quotes out of context:

“We have no doubt that if there was nothing more than the bringing of the infringement action, resulting damages could not be recovered, but that is not the case.”

But, what Talon has quoted is only a part of a paragraph and is artfully silent about the fact that the Court went on to say:

“The facts as hereinbefore detailed are sufficient to support a finding that although Kobe believed some of its patents were infringed, the real purpose of the infringement action and the incidental activities of Kobe’s representatives was to further the existing monopoly and to eliminate Dempsey as a competitor. *The infringement action and the related activities, of course, in themselves were not unlawful,* and standing alone would not be sufficient to sustain a claim for damages which they may have caused, but when considered with the entire monopolistic scheme which preceded them we think, as the trial court did, that they may be considered as having been done to give effect to the unlawful scheme.” (P. 425).*

A most important element in the Court’s findings of monopolistic practices in the *Kobe* case was the sequence of patent pooling contracts:

“We think the evidence warrants the finding that the first Kobe-Rodless agreement and the creation of Roko was the beginning of an arrangement to corner the hydraulic pump business for oil wells and that it had that result. The record indicates that every important patent which was issued relating to this field of the industry, although never used, found its way into that pool and no other such pump was manufactured by anyone else but Kobe, old or new, until Dempsey put one on the market in 1948.” (P. 423).

Talon’s presentation of the *Kobe* case is more than misleading; it is a wilful deception.

* Emphasis is ours, except where stated to the contrary.

Talon seeks support in *Hunter Douglas Corporation v. Lando Products* (235 F. 2nd 631), an interesting case but not in point. In the *Hunter* case, this Court held that the claimant failed to prove the tie-in sales which were alleged as well as failing to prove that such sales had adversely affected the claimant's business. Here, Talon's monopolistic acts were certainly proved to the satisfaction of the District Court. The present failure to prove damage resulted from the District Court's ruling that evidence of such damage was somehow inadmissible, which is really at the heart of the matter.

To complete its masterpiece of irresponsibility, Talon cites *Flintkote v. Lysfjord*, 246 F. 2nd 368 (9th Cir. 1957), which if properly quoted says:

“The cases have drawn a distinction between the quantum of proof necessary to show the *fact* as distinguished from the *amount* of damage; the burden as to the former is the more stringent one. In other words the *fact* of injury must first be shown before the jury is allowed to estimate the amount of damage.” (P. 392)

Then quoting from the United States Supreme Court in *Story Parchment Company v. Patterson Parchment Paper Co.* (282 U. S. 555), this Court continued:

“It is true that there was uncertainty as to the extent of damage, but there was none as to the fact of damage; and there is a clear distinction between the measure of proof necessary to establish the fact that plaintiff sustained some damage, and the measure of proof necessary to enable a jury to fix the amount. The rule which precludes the recovery of uncertain damages applies to such as are not the certain result of the wrong, not to those damages which are definitely attributable to the wrong and only uncertain in respect of this amount.”

This does not have the remotest bearing to the present case where the District Court refused to *admit evidence* on the *fact and amount* of damage.

Conclusion.

Talon's answering brief is even further proof of the lengths it is willing to go in maintaining its illegal structure. Union should be provided an opportunity to present its case in full and to explain its right to damages for Talon's illegal acts.

Respectfully submitted,

ALAN D. MOCKABEE,
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Los Angeles, Cal.
Attorney for Union Slide Fastener.

DELANVAN SMITH,
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160 Broadway,
New York 38, N. Y.,
Of Counsel.

No. 15719 /

United States
Court of Appeals
For the Ninth Circuit

WILLIAM P. ROGERS, as Attorney General of
the United States of America,

Appellant,

vs.

URHO PAAVO PATOKOSKI,

Appellee.

Transcript of Record

FILED

FEB 17 1959

PAUL P. O'BRIEN, CLERK

Appeal from the United States District Court
for the District of Oregon.



No. 15719

**United States
Court of Appeals**
For the Ninth Circuit

—

WILLIAM P. ROGERS, as Attorney General of
the United States of America,

Appellant,

vs.

URHO PAAVO PATOKOSKI,

Appellee.

—

Transcript of Record

—

**Appeal from the United States District Court
for the District of Oregon.**



INDEX

[Clerk's Note: When deemed likely to be of an important nature, errors or doubtful matters appearing in the original certified record are printed literally in *italic*; and, likewise, cancelled matter appearing in the original certified record is printed and cancelled herein accordingly. When possible, an omission from the text is indicated by printing in *italic* the two words between which the omission seems to occur.]

	PAGE
Answer	6
Answer, Amended	25
Answer to Interrogatories	20
Answer to Supplemental Complaint	16
Attorneys, Names and Addresses of	1
Certificate of Clerk	95
Complaint	3
Docket Entries	94
Findings of Fact, Conclusion of Law and Judgment	28
Interrogatories to be Propounded to Plaintiff	18
Memorandum of Decision	27
Motion for Extension of Time and Docketing Record	37
Affidavit of Harr, Victor E.	38
Motion for Leave to File Supplemental Com- plaint	12
Ex. A—Supplenmental Complaint	13
Notice of Appeal	36

INDEX	PAGE
Order Extending Time for Filing Record on Appeal	39
Order Granting Leave to File Supplemental Complaint	15
Reply	9
Statement of Points Upon Which Appellant Intends to Rely on Appeal	98
Stipulation Re Printing of Record	100
Transcript of Proceedings	41
Witnesses:	
Koskinen, Franz W.	
—direct	88
Patokoski, Urho Paavo	
—direct	46
—cross	65
—redirect	86
—recross	87

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VICTOR E. HARR,

Assistant United States Attorney,

United States Courthouse,

Portland, Oregon,

For Appellant.

DAVIS, JENSEN, MARTIN & ROBERTSON;

WILLIAM A. MARTIN,

514 U. S. National Bank Building,

Portland, Oregon,

For Appellee.



In the District Court of the United States
for the District of Oregon

Civil Action No. 8189

URHO PAAVO PATOKOSKI,

Plaintiff,

vs.

HERBERT BROWNELL, JR., as Attorney Gen-
eral of the United States of America,

Defendant.

COMPLAINT UNDER SECTION 1503, UNITED
STATES NATIONALITY ACT OF 1952

Plaintiff, for cause of action against the defend-
ant, complains and alleges:

I.

This is an action under the provisions of Section 2201 of Title 28, as authorized by Section 1503 of Title 8 (Act of June 27, 1932, C. 477, Title III, ch. 3, Section 360, 66 Stat. 273), commonly known as the United States Nationality Act of 1952.

II.

The plaintiff was born on July 19, 1907, at Meri-
jarvi, Finland. The plaintiff's father was a natural-
ized citizen of the United States of America at the
time of the plaintiff's birth, and the plaintiff is
therefore a citizen of the United States of America.

III.

The plaintiff's permanent residence is within the
District of Oregon.

IV.

The defendant is the duly appointed and acting Attorney General of the United States of America, and as such is the head of the Department of Justice of the said United States of America, and of the Immigration and Naturalization Service, which is an agency of the said Department.

V.

The defendant, as the head of such Department and of such agency, is empowered to require the voluntary departure or deportation of aliens from the United States of America who are not lawfully within the said United States of America.

VI.

On or about April 20, 1949, the Commissioner of such agency entered an order in deportation proceedings against the plaintiff, and Toini Esteri Patokoski, the plaintiff's wife, and Timo Matti Juhani Patokoski, Pekka Jouko Kalevi Patokoski and Paavo Esa Antero Patokoski, the minor sons of the plaintiff, requiring them to depart voluntarily from the United States of America within three months from the date of notification of such order. On or about July 7, 1955, such agency delivered to the plaintiff and to his wife and to his minor sons, a notice of intention to recommend the entry of an alternate order to the effect that if they did not voluntarily depart from the United States of America on or before July 30, 1955, the order requiring their voluntary departure would be withdrawn with-

out further notice or proceedings, and they would be deported from the United States of America.

VII.

In such order made on or about April 20, 1949, the Commissioner admitted and acknowledged that the plaintiff was a citizen of the United States of America at the time of the plaintiff's birth, but such agency and such Department have heretofore insisted and are now insisting on the voluntary departure of the plaintiff, the plaintiff's wife and the plaintiff's minor sons, or in absence thereof, their deportation, on the sole ground that such agency and such Department were and now are of the opinion that the plaintiff has lost his United States of America citizenship.

VIII.

The plaintiff has not renounced his United States of America citizenship and has done nothing since his birth to expatriate himself or to justify such agency and such Department to require him to voluntarily depart from the United States of America, or in the absence thereof to deport him, solely on the ground that the plaintiff has lost his United States of America citizenship.

IX.

By reason of the plaintiff's United States of America citizenship, the plaintiff's wife and his minor sons are entitled to non-quota status as immigrants of the United States of America, and they should be permitted to petition for such without

voluntary departure from the United States of America, or deportation therefrom.

Wherefore, the plaintiff prays for a judgment declaring and adjudging that the plaintiff is a national and citizen of the United States of America, and that the plaintiff is entitled to all the rights and privileges of a national and citizen of the United States of America, and that the wife and minor sons of the plaintiff be permitted to petition for non-quota status as immigrants to the United States of America without voluntary departure or deportation therefrom.

/s/ WILLIAM A. MARTIN,
Attorney for Plaintiff.

Duly Verified.

[Endorsed]: Filed July 22, 1955.

[Title of District Court and Cause.]

ANSWER

Come now C. E. Luckey, United States Attorney for the District of Oregon, and Victor E. Harr, Assistant United States Attorney, by direction of defendant above named and for answer to the complaint on file herein admits, denies and alleges as follows:

1. Answering paragraph I thereof defendant admits that plaintiff has predicated his complaint on the statutes set forth in said paragraph, but

defendant denies that a cause of action exists thereunder and therefore denies the same and the whole thereof.

2. Answer paragraph II admits the plaintiff was born in Finland, the exact date being to this defendant unknown; admits that plaintiff's father was a naturalized citizen of the United States at the time of plaintiff's birth, but specifically denies that plaintiff is now a citizen of the United States.

3. Defendant has no knowledge as to the location of plaintiff's permanent residence and therefore puts plaintiff to proof thereon.

4. Admits the allegation of paragraph IV.

5. Admits the allegation of paragraph V.

6. Admits the allegation of paragraph VI.

7. Admits the allegations of paragraph VII.

8. Answering paragraph VIII defendant has no information as to whether or not plaintiff ever renounced his United States citizenship; as to the balance of said paragraph defendant denies each and every allegation and matter therein contained and the whole thereof.

9. Denies the allegations of paragraph IX.

For a further and separate answer and defense defendant alleges as follows:

10. That the order of the commissioner of April 20, 1949, directed to plaintiff and plaintiff's wife and four sons as more particularly set forth in para-

graph VI of plaintiff's complaint, requiring them to depart voluntarily from the United States of America within three months from the date of notification of such order, was a final administrative denial within the contemplation of Section 1503, Title 8, USC and the within action having been instituted by plaintiff more than five years after the entry of said final order, his right to proceed under Section 2201, Title 28, USC, is time barred.

For a second and further affirmative answer and defense, defendant alleges as follows:

11. That prior to the filing of the within complaint by plaintiff, plaintiff caused to be filed with the United States Department of Justice, Immigration and Naturalization Service, his "exception to recommendation for entry of alternative order providing for deportation and application for stay of proceedings" and also filed his "motion to reconsider motion to reopen hearing and adjust status for permanent residence," said motions having been lodged with the Portland Office of the Immigration and Naturalization Service, U. S. Department of Justice, on July 13, 1955; that there has been no administrative determination on the aforesaid motions and therefore defendant alleges that plaintiff's administrative remedies have not been exhausted and the within action therefore is premature and should be dismissed.

For a third further and affirmative answer and defense, defendant alleges as follows:

12. That plaintiff while residing in a foreign land

to wit, Finland, and after attaining the age of twenty-one years entered military service in the Finnish Army in connection with said service and took oaths of allegiance to the Finnish Government; that by virtue of the said oaths plaintiffs thereby divested himself of citizenship in the United States of America under the Act of March 2, 1907 (34 Stat. 1228), the provisions of Section 2 of which declared, in part, that any American citizen shall be deemed to have expatriated himself when he has taken an oath of allegiance to any foreign state.

Wherefore defendant having fully answered plaintiff's complaint herein, prays that the same be dismissed and held for nought and that defendant be awarded his costs and disbursements herein.

C. E. LUCKEY,
United States Attorney;

/s/ VICTOR E. HARR,
Assistant United States At-
torney.

Affidavit of Mail attached.

[Endorsed]: Filed September 16, 1955.

[Title of District Court and Cause.]

REPLY

Plaintiff, for his reply to the answer of the defendant on file herein, admits, denies and alleges as follows:

I.

Replying to the further and separate answer and defense therein, alleges that the plaintiff has no information or knowledge sufficient to form a belief as to the truth of the allegations in said answer and defense and therefore denies the same and the whole thereof.

II.

Replying to the second and further affirmative answer and defense therein, admits that prior to the filing of his complaint herein, the plaintiff caused to be filed with the United States Department of Justice, Immigration and Naturalization Service, an exception to the recommendation for entry of alternative order providing for deportation and application for stay of proceedings, and a motion to reconsider motion to reopen hearing and adjust status for permanent residence, and that said motions were lodged with the Portland Office of the Immigration and Naturalization Service, United States Department of Justice, on or about July 13, 1955, and denies each and every other allegation, matter and thing therein contained.

III.

Replying to the third further and affirmative answer and defense therein, admits that the plaintiff, while residing in a foreign land, to wit: Finland, and after attaining the age of twenty-one years entered military service in the Finnish Army and in connection with said service took an oath of

allegiance to the Finnish government, and denies each and every other allegation, matter and thing therein contained.

And, for a further and separate reply, the plaintiff alleges:

I.

As much of the act of March 2, 1907, (34 Stat. 1228) as provides that an American Citizen shall be deemed to have expatriated himself when he has taken an oath of allegiance to any foreign state is unconstitutional and void in that it is in conflict with the Constitution of the United States of America and the statutes promulgated thereunder unless such oath of allegiance is taken as the result of a voluntary procedure on the part of such citizen.

And, for a second further and separate reply, the plaintiff alleges:

I.

The service by the plaintiff in the Finnish Army and the oath of allegiance to the Finnish government taken by the plaintiff in connection therewith were involuntary on the part of the plaintiff and were undertaken under such circumstances as to constitute compulsion, legal duress, force and fraud upon the plaintiff, and by reason thereof, the plaintiff should not be deemed to have expatriated himself as a citizen of the United States of America.

Wherefore, having fully replied to the defendant's answer on file herein, the plaintiff prays for

judgment as prayed for in his complaint on file herein.

DAVIS, JENSEN, MARTIN &
ROBERTSON,

By /s/ WILLIAM A. MARTIN,
Attorneys for Plaintiff.

[Endorsed]: Filed February 1, 1956.

[Title of District Court and Cause.]

MOTION FOR LEAVE TO FILE
SUPPLEMENTAL COMPLAINT

Plaintiff moves the court for leave to file a supplemental complaint, a copy of which is attached hereto as Exhibit A, on the ground that the transactions, occurrences and events stated therein have happened since the date of the plaintiff's original complaint and that it is in the interest of justice that all issues between plaintiff and defendant be litigated in this action.

DAVIS, JENSEN, MARTIN &
ROBERTSON,

By /s/ WILLIAM A. MARTIN,
Attorneys for Plaintiff.

EXHIBIT A

In the United States District Court
for the District of Oregon

Civil No. 8189

URHO PAAVO PATOKOSKI,

Plaintiff,

vs.

HERBERT BROWNELL, JR., as Attorney Gen-
eral of the United States of America,

Defendant.

SUPPLEMENTAL COMPLAINT

Plaintiff, for a supplemental complaint herein,
complains and alleges:

I.

On or about the 22nd day of July, 1955, the plaintiff caused to be filed herein his Complaint under Section 1503, United States Nationality Act of 1952, and at the said time also caused to be filed a Motion for a Temporary Restraining Order and Preliminary Injunction. The said Motion thereafter came on for hearing, and prior to a decision therein it was stipulated in open court between the parties hereto, by and through their respective attorneys of record herein, that any proceedings to deport the plaintiff, or any members of his family, would be

held in abeyance pending the decision of the issues in this cause.

II.

Notwithstanding the said stipulation, the United States Department of Justice, acting by and through its Board of Immigration appeals, by order dated December 30, 1955, ordered the plaintiff and the members of his family to voluntarily depart from the United States within a period of thirty (30) days from the date of their receipt of the said order, and further ordered that upon the failure of the plaintiff and the members of his family to so depart within the said period of time a warrant for their deportation be issued and executed.

III.

The Department of Justice, by and through the Immigration and Naturalization Service will enforce the said order unless effect is given to the said stipulation hereinbefore mentioned. In the event the said stipulation is not held effective, then the plaintiff desires to have a hearing on the said Motion for a Temporary Restraining Order and Preliminary Injunction.

Wherefore, the plaintiff prays that the Department of Justice, by and through the Immigration and Naturalization Service be enjoined from enforcing the departure or deportation of the plaintiff and the members of his family from the United States until the above-entitled cause has been finally

determined, and for judgment as prayed for in his complaint on file herein.

DAVIS, JENSEN, MARTIN &
ROBERTSON,

By /s/ WILLIAM A. MARTIN,
Attorneys for Plaintiff.

Duly verified.

[Endorsed]: Filed February 1, 1956.

[Title of District Court and Cause.]

ORDER

This cause came on to be heard on plaintiff's motion for leave to file a supplemental complaint herein, and the court being fully advised,

It Is Ordered (1) That plaintiff be given leave to file his supplemental complaint;

(2) That defendant answer or move with respect to the supplemental complaint on July 9, 1956.

Dated: Feb. 1st, 1956.

/s/ WILLIAM G. EAST,
Judge.

[Endorsed]: Filed February 1, 1956.

[Title of District Court and Cause.]

ANSWER TO SUPPLEMENTAL COMPLAINT

Comes now C. E. Luckey, United States Attorney for the District of Oregon, and Victor E. Harr, Assistant United States Attorney, by direction of the defendant above named, and for answer to plaintiff's supplemental complaint on file herein, admits, denies and alleges as follows:

1. Admits the allegations of Paragraph I.
2. For answer to Paragraph II, defendant admits that pursuant to stipulation of the parties, the United States Department of Justice, acting by and through its Board of Immigration Appeals, considered plaintiff's "Motion to Reconsider Motion to Reopen Hearing and Adjust Status for Permanent Residence" referred to in defendant's second and further affirmative answer and defense heretofore filed in this cause; that having considered said motion and supporting brief filed by plaintiff, the said Board of Immigration Appeals, on November 3, 1955, denied said motion and subsequently made an order dated December 30, 1955, wherein plaintiff and members of his family were ordered to voluntarily depart from the United States within a period of 30 days from the date of their receipt of the said order; that upon the failure of plaintiff and members of his family to so depart within the said period, it was further ordered that a Warrant

of Deportation would issue; but denies the remaining allegations in said paragraph.

3. For answer to Paragraph III, defendant asserts that it will abide by its stipulation heretofore expressed in open court, to the effect that no affirmative action will be taken to deport plaintiff or members of his family pending a full determination of the issues before this court in the within cause.

Wherefore, defendant having answered plaintiff's supplemental complaint herein, prays that the same be dismissed and held for nought and that defendant be awarded its costs and disbursements herein incurred.

C. E. LUCKEY,
United States Attorney,
District of Oregon;

/s/ VICTOR E. HARR,
Assistant United States Attorney, of Attorneys for
Defendant.

Affidavit of service by mail attached.

[Endorsed]: Filed July 6, 1956.

[Title of District Court and Cause.]

Civil No. 8189

INTERROGATORIES TO BE PROPOUNDED
TO PLAINTIFF

To: Urho Paavo Patokoski, Plaintiff, and to Davis, Jensen, Martin & Robertson, Attorneys of Record for Plaintiff:

Please Take Notice that defendant above named requires the plaintiff, Urho Paavo Patokoski, on oath and in writing, to answer the following interrogatories within 15 days from the date of service hereof, pursuant to the provisions of Rule 33 of the Federal Rules of Civil Procedure:

1. State the date or dates when you became a member of the Finnish Army and the date or dates when you were discharged from the Finnish Army.
2. State your rank upon entering the military service in the Finnish Army and rank when you obtained your discharge.
3. State whether or not you enlisted in the military service of the Finnish Army or whether said military service was by conscription.
4. If, during the period of service in the Finnish Army, you were promoted to a higher rank, state whether or not you made a voluntary application to obtain said higher rank.
5. Did you attend any military schools or obtain special training to obtain a higher rank, if any?

6. If you were conscripted into the Finnish Army, state whether or not you made any objection thereto.

7. If the answer to the next preceding question is that you did make objection, state in detail what objection was made and the manner and mode of said objection and whether it was written or oral.

8. If a written objection was made, furnish defendant with a true copy of said objection.

9. Was objection to service in the Finnish Army, if any, made at any time upon the grounds that you were a citizen of the United States?

10. State in detail the basis for your contention that your military service in the Finnish Army was involuntary.

11. State in detail how your military service with the Finnish Army was undertaken under circumstances as to constitute compulsion, legal duress, force and fraud upon you.

12. State as nearly as you can recall, the date on which you first contended to be a citizen of the United States.

13. At the time of taking the oath of allegiance to the Finnish Government, did you take said oath sincerely and honestly?

14. Did you at any time prior to your attaining the age of 21 years, feel that you did not owe your allegiance to the Finnish Government?

15. If your answer to the next preceding question is "Yes," state when you arrived at that decision and state in detail the reasons therefor.

C. E. LUCKEY,
United States Attorney,
District of Oregon;

/s/ VICTOR E. HARR,
Assistant United States Attorney, of Attorneys for
Defendant.

Affidavit of service by mail attached.

[Endorsed]: Filed July 9, 1956.

[Title of District Court and Cause.]

ANSWER TO INTERROGATORIES

Answer of Urho Paavo Patokoski, plaintiff to interrogatories served on him by Herbert Brownell, Jr., as Attorney General of the United States of America, defendant, on July 6, 1956:

Interrogatory No. 1. I first served in the Finnish Army during the period March, 1928, to May, 1929. My next service was from October, 1939, to July, 1940, and my last service was from June, 1941, to October, 1944.

Interrogatory No. 2. My rank upon entering military service in March, 1928, was private and upon being discharged in May, 1929, I was a ser-

geant. When I again entered service in October, 1939, I was a sergeant and I was discharged in July, 1940, as a 2nd Lieutenant. Upon being recalled to service in 1941 I was a 2nd lieutenant and when I was discharged in 1944 I was a 1st lieutenant.

Interrogatory No. 3. All of my service in the Finnish Army was rendered as a result of conscription into the service.

Interrogatory No. 4. I never made any voluntary application to obtain a higher rank in the Finnish Army. All promotions which I received were automatic, based upon the term of service.

Interrogatory No. 5. Yes, during the period from October, 1939, to July, 1940, I attended a reserve officers' training school under orders of the Finnish Military Command.

Interrogatory No. 6. I did not make any objection at the time of my conscription into the Finnish Army for the reason that it was useless to do so.

Interrogatory No. 7. Not applicable.

Interrogatory No. 8. Not applicable.

Interrogatory No. 9. I did not make any objection to service in the Finnish Army at any time upon the grounds that I was a citizen of the United States because I did not know that I was a citizen of the United States or that I had any rights as such.

Interrogatory No. 10. Finland had a law of uni-

versal military conscription for all males who attained the age of 18 years. When I reached the age of 18 years I was conscripted into the Finnish Army. At that time I did not know that I was a citizen of the United States. I was physically acceptable for service, and, since no other exemptions from service in the Finnish Army were recognized, I had to serve. During the period from October, 1939, to July, 1940, the famous, "Winter War," when Russia attacked Finland, was fought, and all males in Finland who had had military training were immediately conscripted for service. At that time I had no knowledge of my United States citizenship and knew of no basis on which to object to service. During the period from June, 1941, to October, 1944, the Second World War was being fought and again all males in Finland with military training were conscripted into service. I still had no knowledge of my status as a United States citizen and had no basis that I knew of on which to object to service. Refusal to serve would have resulted in a criminal prosecution and those who objected to service were sentenced to hard labor.

Interrogatory No. 11. The circumstances I have related in connection with Interrogatory No. 10 are such as to constitute compulsion, legal duress, force and fraud upon me in connection with the military service I was required to render with the Finnish Army.

Interrogatory No. 12. At one of the first conferences that I had with the representatives of the

Immigration and Naturalization authorities in Portland, Oregon, I was asked of what country I considered myself a citizen. I stated that I did not know of what country I was a citizen, but I had been under the belief that I was a citizen of Finland, since I was born there and had never had any indication to the contrary from my parents. At that time I produced a certificate of naturalization which indicated that my father, Matti Niemela, was a naturalized citizen of the United States, and I stated that I did not know what status this left me in as to United States citizenship. I had found this certificate in my mother's personal effects when she passed away in the fall of 1945, and I brought it with me to Portland, Oregon, when my family and I came here from Finland. I left this certificate with the Immigration and Naturalization Service and about two years later I received a communication from that service stating that I was a citizen of the United States by virtue of my father's citizenship, but that I had lost such citizenship and would have to go back to Finland with my family. From that time I have contended that I am a citizen of the United States.

Interrogatory No. 13. I have no recollection regarding my feeling when I took the oath of allegiance to the Finnish government at the times of my conscription into service in the Finnish army. The group of conscriptees was taken to a church, where the oath was administered to the entire group, then coffee and coffee cake were served after which

we left for service. As far as I was concerned, and I believe this was probably true of the entire group, this was a matter of formality or mechanics for processing us into service, more than anything else, for everyone had to take the oath of allegiance upon being conscripted. I would, therefore, say that in view of my lack of knowledge as to my rights as a citizen of the United States I took the oath of allegiance at the times of my conscription into the Finnish army as sincerely and honestly as anyone else that was so conscripted. If I had known of my status as a United States citizen I would have protested to taking such oath and I would have objected to service, and, if my protests and objections had been overruled, then I could say that any oath I would have been forced to take would not have been taken sincerely and honestly.

Interrogatory No. 14. I did not feel at any time prior to attaining the age of 21 years that I did not owe my allegiance to the Finnish government because I had no knowledge of my rights as a United States citizen and consequently did not know that my true allegiance was not to the Finnish government but to the United States.

Interrogatory No. 15. Not applicable.

/s/ URBO PAAVO PATOKOSKI.

Duly verified.

[Endorsed]: Filed July 18, 1956.

[Title of District Court and Cause.]

AMENDED ANSWER

Comes now C. E. Luckey, United States Attorney for the District of Oregon, and Victor E. Harr, Assistant United States Attorney, by direction of defendant above named and leave of Court having been first obtained, files this amended answer to the complaint herein and admits, denies and alleges as follows:

1. Answering Paragraph I thereof defendant admits that plaintiff has predicated his complaint on the statutes set forth in said Paragraph, but defendant denies that a cause of action exists thereunder and therefore denies the same and the whole thereof.

2. Answering Paragraph II thereof admits that plaintiff was born in Finland, the exact date being to this defendant unknown; admits that plaintiff's father was a naturalized citizen of the United States at the time of Plaintiff's birth, but specifically denies that plaintiff is now a citizen of the United States.

3. Defendant has no knowledge as to the location of plaintiff's permanent residence and therefore puts plaintiff to proof thereon.

4. Admits the allegation of Paragraph IV.

5. Admits the allegation of Paragraph V.

6. Admits the allegation of Paragraph VI.

7. Admits the allegations of Paragraph VII.

8. Answering Paragraph VIII defendant has no information as to whether or not plaintiff ever renounced his United States citizenship; as to the balance of said Paragraph, defendant denies each and every allegation and matter therein contained and the whole thereof.

9. Denies the allegations of Paragraph IX.

For a further and separate answer and defense defendant alleges as follows:

10. That the order of the commissioner of April 20, 1949, directed to plaintiff and plaintiff's wife and four sons as more particularly set forth in Paragraph VI of plaintiff's complaint, requiring them to depart voluntarily from the United States of America within three months from the date of notification of such order, was a final administrative denial within the contemplation of Section 1503 Title 8 USC, and the within action having been instituted by plaintiff more than five years after the entry of said final order, his right to proceed under Section 2201, Title 28, USC, is time barred.

For a second further affirmative answer and defense, defendant alleges as follows:

11. That plaintiff while residing in a foreign land, to wit: Finland, and after attaining the age of twenty-one years, entered military service in the Finnish army in connection with said service and took oaths of allegiance to the Finnish Government

and voted in a political election in Finland, a foreign state; that by virtue of said oaths of allegiance upon entering the military service and voting in the political elections of Finland plaintiff thereby divested himself of citizenship in the United States of America under the Act of Congress of March 2, 1907, (34 Stat. 1228) as amended.

Wherefore Defendant having fully answered plaintiff's complaint herein, prays that the same be dismissed and held for nought and that defendant be awarded his costs and disbursements herein.

C. E. LUCKEY,

United States Attorney for
the District of Oregon;

/s/ VICTOR E. HARR,

Assistant United States
Attorney.

Affidavit of service by mail attached.

[Endorsed]: Filed October 26, 1956.

[Title of District Court and Cause.]

MEMORANDUM OF DECISION

In none of the cases cited by the Government does it appear that the citizen did not know that he was a citizen at the time he did the things which were alleged to have cost him his citizenship. In-

deed, this case may be one of first impression in that respect. Plaintiff to submit Findings.ⁿ

Dated March 14, 1957.

/s/ CLAUDE McCOLLOCH,
Judge.

[Endorsed]: Filed March 14, 1957.

United States District Court
District of Oregon
Civil Action No. 8189

URHO PAAVO PATOKOSKI,

Plaintiff,

vs.

HERBERT BROWNELL, JR., as Attorney Gen-
eral of the United States of America,

Defendant.

FINDINGS OF FACT, CONCLUSIONS
OF LAW AND JUDGMENT

The above-entitled cause came regularly on for trial on October 29, 1956, before Honorable Claude McColloch, District Judge of the above-entitled Court, the plaintiff appearing in person and by William A. Martin, one of his attorneys, and the

ⁿ "Expatriate" and "abandonment" are used interchangeably in the decisions. "Intentional relinquishment of a known right" is the classic definition of abandonment.

defendant appearing by Victor E. Harr, Assistant United States Attorney, and testimony and evidence on behalf of the plaintiff and the defendant having been presented, and the Court having heard the oral statements and oral arguments of the respective counsel for the parties, and having considered the written briefs of the parties, and now being fully advised in the premisses, now does hereby make and enter the following

Findings of Fact

I.

The plaintiff was born on July 19, 1907, at Meri-jarvi, Finland.

II.

The plaintiff's father, Matti Niemela, was a naturalized citizen of the United States of America at the time of the plaintiff's birth, having been naturalized in the above-entitled Court at Portland, Oregon on August 13, 1894. The plaintiff's father returned to Finland several years after he was naturalized, where he married, and the plaintiff was born as issue of such marriage.

III.

At the time of the plaintiff's birth and at all times since his birth, the plaintiff has been, and is now, a national and citizen of the United States of America, possessing all of the rights, privileges and immunities of such citizenship.

IV.

The plaintiff's permanent residence is within the District of Oregon.

V.

The defendant is the duly appointed and acting Attorney General of the United States of America, and as such is the head of the Department of Justice of the said United States of America, and of the Immigration and Naturalization Service, which is an agency of the said Department.

VI.

The defendant, as the head of such Department and of such agency, is empowered to require the voluntary departure or deportation of aliens from the United States of America who are not lawfully within the United States of America.

VII.

The plaintiff was required to register for universal military training under the laws of the Republic of Finland when he reached the age of 18 years. When he was 20 years of age he was required to enter military service for training under the universal military training laws of such republic. At that time he took an oath of allegiance to the Finnish Government. The plaintiff served in the Finnish Army on three occasions, from March, 1928, to May, 1929; from October, 1939, to July, 1940; and from June, 1941, to October, 1944. He did not take an oath of allegiance to the Finnish Government

upon entering service the last two times. The plaintiff entered the Finnish Army as a private, and at the end of his third period of service he had attained the rank of first lieutenant. All advancement in rank of the plaintiff was automatic, based on his length of service. The plaintiff never volunteered for, nor made application for officer's training, nor any other training with a view to securing advancement in rank.

VIII.

The plaintiff voted in the general political election in Finland in approximately 1946. At that time all persons were urged to vote to keep Communists from gaining control of the Finnish Government.

IX.

The plaintiff's father died in 1928. His mother died in 1945. After his mother's death, the plaintiff found among her personal belongings the Certificate of Naturalization which was issued to his father at the time of his father's naturalization. The plaintiff lived approximately six hundred miles from the nearest United States Consul's office, which was located at Helsinki, Finland. The plaintiff was not told by his parents or any other person that he was a citizen of the United States of America at the time of his birth, and did not know until he was so informed by the Department of Immigration and Naturalization that he was a citizen of the United States of America at the time of his birth. After his mother's death, the plaintiff determined to come

to the United States of America, and secured a six-months' visitor's visa to visit the United States of America and study construction techniques. He and his family arrived in the United States of America in 1947. Prior to the end of the six-month period of his visa the plaintiff requested an extension of his right to stay in the United States of America. This request was denied, and a hearing in deportation proceedings was held by the Department of Immigration and Naturalization at which time the plaintiff produced his father's Certificate of Naturalization. The said agency thereafter, some two years later informed the plaintiff that he had been a citizen of the United States of America at the time of his birth, but had lost such citizenship by serving in the Finnish Army.

X.

On or about April 20, 1949, the Commissioner of the said agency entered an order in deportation proceedings against the plaintiff, and Toini Esteri Patokoski, his wife, and Timo Matti Juhani Patokoski, Pekka Jouko Kalevi Patokoski, and Paavo Esa Antero Patokoski, the plaintiff's minor sons, requiring them to depart voluntarily from the United States of America within three months from the date of notification of such order.

XI.

Private bills for the relief of the plaintiff and his family, to consider them as legally admitted residents of the United States of America, were intro-

duced in the Congress of the United States of America but such bills failed of passage.

XII.

Application was made to the Board of Immigration Appeals for suspension of deportation under the provisions of Section 244 (a) (1) of the Immigration and Nationality Act of 1952, on the ground that deportation of the plaintiff and his family from the United States of America to Finland would result in exceptional and extremely unusual hardship, but relief to the plaintiff and his family under this act on such grounds was denied.

XIII.

On or about July 7, 1955, the Department of Immigration and Naturalization delivered to the plaintiff, his wife and his minor sons, a notice of intention to recommend the entry of an alternate order to the effect that if they did not voluntarily depart from the United States of America on or before July 30, 1955, the order requiring their voluntary departure would be withdrawn without further notice or proceedings and they would be deported from the United States of America. On or about December 30, 1955, the said department, acting by and through the said Board of Immigration Appeals, ordered the plaintiff and his family to voluntarily depart from the United States of America within a period of 30 days from the date of their receipt of such order, and further ordered that upon

the failure of the plaintiff and his family to so depart within such period of time, a warrant for their deportation be issued and executed.

XIV.

The plaintiff's surname was duly and regularly changed by decision of the Governor of the Province of Oulu, Finland, made and entered on February 9, 1939, from "Nemela" to "Patokoski."

Based upon the foregoing Findings of Fact, the Court now makes the following

Conclusions of Law

I.

The Court has jurisdiction of this cause by virtue of the provisions of Section 2201 of Title 28, as authorized by Section 1503 of Title 8 (Act of June 27, 1932, C. 477, Title III, ch. 3, Section 360, 66 Stat. 273), commonly known as the United States Nationality Act of 1952.

II.

The plaintiff could not expatriate himself or lose or abandon his United States of America Citizenship by taking an oath of allegiance to the Finnish Government or by serving in the Finnish Army or by voting in a Finnish election because he did not know he was a citizen of the United States of America when he did those things, and the plaintiff has not expatriated himself or lost or abandoned his United States of America citizenship by doing those things with such lack of knowledge.

III.

This action is not time barred.

IV.

The plaintiff did not expatriate himself by residing in Finland from the time of his birth to 1947.

V.

The plaintiff is entitled to be awarded a judgment and decree herein declaring and adjudging him to be a citizen and national of the United States of America and declaring and adjudging him entitled to all the rights, privileges and immunities of a national and citizen of the United States of America.

Based upon the foregoing Findings of Fact and Conclusions of Law, the Court now makes the following

Judgment

Now Therefore, it is Hereby Considered, Ordered and Adjudged as follows:

I.

That the plaintiff, Urho Paavo Patokoski, be and he is hereby adjudged and declared to be a citizen and national of the United States of America and entitled to all the rights, privileges and immunities of a national and citizen of the United States of America.

II.

That the plaintiff, Urho Paavo Patokoski, be and he is hereby adjudged not to have expatriated him-

self as a citizen or national of the United States of America and not to have lost or abandoned such citizenship by serving in the Finnish military service or voting in a Finnish political election or taking an oath of allegiance to the Government of Finland or residing in Finland from the time of his birth to his departure therefrom to the United States of America in 1947, or in any other manner.

Dated this 1st day of April, 1957.

/s/ CLAUDE McCOLLOCH,
Chief Judge.

Service of copy acknowledged.

[Endorsed]: Filed April 1, 1957.

[Title of District Court and Cause.]

NOTICE OF APPEAL

To: Urho Paavo Patokoski, Plaintiff, and his attorneys, Davis, Jensen, Martin & Robertson:

Notice is hereby given that Herbert Brownell, Jr., as Attorney General of the United States of America, defendant above named, hereby appeals to the United States Court of Appeals for the Ninth Circuit, from the Judgment entered in the above-entitled cause on April 1, 1957, in favor of plaintiff herein.

Dated this 20th day of May, 1957.

C. E. LUCKEY,
United States Attorney;

/s/ VICTOR E. HARR,
Assistant United States Attorney, of Attorneys for
Defendant.

[Endorsed]: Filed May 29, 1957.

[Title of District Court and Cause.]

Civil No. 8189

MOTION FOR EXTENSION OF TIME FOR
FILING THE RECORD ON APPEAL AND
DOCKETING THE WITHIN ACTION IN
THE U. S. COURT OF APPEALS, NINTH
CIRCUIT

Comes now the defendant above named by and through his attorneys, C. E. Luckey, United States Attorney for the District of Oregon, and Victor E. Harr, Assistant United States Attorney, and based upon the Affidavit of Victor E. Harr, attached hereto and by this reference made a part hereof, moves the Court for an order extending the time for filing the record on appeal and docketing the within action in the United States Court of Appeals for the Ninth Circuit, to ninety days from the date of filing of said Notice of Appeal. This motion is made pursuant to Rule 73(g) of the Federal Rules of Civil Procedure.

Dated this 1st day of July, 1957.

C. E. LUCKEY,

United States Attorney, for
the District of Oregon;

/s/ VICTOR E. HARR,

Assistant U. S. Attorney.

AFFIDAVIT

United States of America,
District of Oregon, County of Multnomah—ss.

I, Victor E. Harr, being first duly sworn on oath, depose and say:

That I am an Assistant United States Attorney for the District of Oregon and one of the attorneys for appellant in the cause set forth in the motion of which this Affidavit is a part (Civil No. 8189); that following the Court's Opinion and the entry of the Judgment herein, the question of whether or not to appeal was referred to the Department of Justice, Washington, D. C.; that following the entry of judgment herein a protective notice of appeal was filed to enable the Solicitor General to analyze the facts and law involved herein and to determine finally as to whether or not said appeal should be prosecuted; that your affiant, based upon a telegram from the Department of Justice, is advised that the recommendation of the Department of Justice to the Solicitor General as to whether or not an appeal herein should be finally prosecuted, has been with-

held pending Supreme Court decisions on related issues, and which said decisions have not as yet been rendered.

I further depose and say that the last date that the record on appeal may be filed with the Clerk of the United States Court of Appeals for the Ninth Circuit, is July 8, 1957; that to await the rendition of the Supreme Court decision as aforesaid, additional time is requested within which to file the record and docket the appeal, as aforesaid; that this affidavit is made in support of a motion to extend time to file the record and docket the appeal with the Clerk of the United States Court of Appeals for the Ninth Circuit.

/s/ VICTOR E. HARR.

Subscribed and sworn to before me this 1st day of July, 1957.

R. DeMOTT,
Clerk;

By /s/ T. LUND,
Deputy.

[Endorsed]: Filed July 3, 1957.

[Title of District Court and Cause.]

ORDER

This matter coming on to be heard ex parte this day upon motion of defendant through his attor-

neys, C. E. Luckey, United States Attorney for the District of Oregon, and Victor E. Harr, Assistant United States Attorney, for an order extending time for filing the record on appeal and docketing the within action in the United States Court of Appeals for the Ninth Circuit, and the Court being fully advised in the premises, it is hereby

Ordered that the time for filing the within record on appeal and docketing the action be, and it is hereby extended, to ninety days from the date of the filing of the Notice of Appeal herein.

Dated this 3rd day of July, 1957, at Portland, Oregon.

/s/ CLAUDE McCOLLOCH,
Chief Judge.

[Endorsed]: Filed July 3, 1957.

United States District Court,
District of Oregon

Civil No. 8189

URHO PAAVO PATOKOSKI,

Plaintiff,

vs.

HERBERT BROWNELL, JR., an Attorney General of the United States of America,

Defendant.

Before: Honorable Claude McCulloch, Chief Judge.

Appearances:

MR. WILLIAM A. MARTIN,
Of Attorneys for Plaintiff.

MR. VICTOR E. HARR,
Assistant United States Attorney,
Of Attorneys for Defendant.

Portland, Oregon, October 29, 1956

TRANSCRIPT OF PROCEEDINGS

Mr. Harr: Your Honor, in this case of Patokoski vs. Brownell, Civil No. 8189, I propose at this time to file an amended answer to the complaint. Counsel was furnished a copy of it in the mail Friday and received it Saturday. It urges one additional defense and takes away some of the other questions which I considered moot. The additional defense is that the plaintiff had voted in an election in Finland. I ask leave of the Court at this time to file the amended answer.

The Court: I have looked at the files. I have a general idea of what this is about. Do you have testimony?

Mr. Martin: Yes, your Honor, we do have the testimony of the plaintiff, and we have some records from Finland which have been translated into English. We would like to have those admitted too for the purpose of this hearing.

The Court: Proceed.

Mr. Martin: May I make a short statement?

The Court: Yes.

Mr. Martin: If the Court please, Mr. Patokoski,

the plaintiff here is seated with me here at the counsel table. Briefly the facts are these:

Mr. Patokoski's father, whose name was Matti Niemela, came to this country as a young man and was naturalized. He subsequently returned to Finland and was there married and had, I believe, six children, one of [2*] whom is Mr. Patokoski sitting here.

Our evidence will show that Mr. Niemela passed away in 1929, I believe it was, and subsequently his children assumed their family name which was Patokoski.

I have a certificate from the proper authorities in Finland showing that that change of name was made. I believe that there is a little lapse in the records of the Immigration and Naturalization authorities in that respect. Mr. Patokoski was called into the service. They had a universal military prescription law in Finland, and he was called into the service just about three months before he reached his twenty-first birthday. At that time he took an oath of allegiance to the Finnish Government, and then he served his year in the service. Later on, when they had what they called the Winter War between Finland and Russia, he was again called into the service as was every able-bodied man in Finland.

Later on he was again called into the service, but on each of these two latter occasions he did not take any oath of allegiance.

*Page numbering appearing at top of page of original Reporter's Transcript of Record.

Now, he also voted on at least one occasion that he says he can recall, and he believes that that was about 1946. The evidence will be that at that time there were great exhortations on behalf of all Finnish people to vote for the reason that Finland of course, had been devastated [3] by the War; she had joined Germany in the fight against Russia, and there was a constant attempt by Russian-inspired parties and communist-minded people to take over the control of the Finnish Government, and there were great exhortations made on all Finnish people to vote in the election of 1946, at least, to prevent Finland from becoming a communist-controlled nation. So he voted at that time, and he believes that it was a presidential election. I don't think there is any question but what it was a presidential election.

Our evidence will be to the effect that any service he rendered in the military service of Finland was involuntary, without his own voluntary request, and any promotions that he had came through the usual routine promotions, based on the fact that he had completed a certain amount of service. He never applied for any service or any officer candidate school or anything like that. He went along because he had to.

We will have in evidence the military proscription law and a translation of a portion of it, which shows that any person who did not submit himself to service would subject himself to imprisonment in, possibly, a prison camp.

Our other points will be based on the law as it

applies to the facts, your Honor. We will have two contentions: First, that any service that he rendered in the military was involuntary; secondly, we are contending that [4] he was a person holding dual citizenship. He was born in Finland of a naturalized American citizen, and having been born in Finland he was considered a citizen of Finland by the Finnish Government. He was also a citizen of the United States by birth. Under those circumstances, I do not believe that a law stating that he has expatriated himself is constitutional. We will have some cases on that, your Honor.

Now, I might say further that Mr. Patokoski—and our evidence will show this—was not aware of his rights as a citizen of the United States until he was in this country. His father had told the family that he was a naturalized citizen of the United States, but nothing had ever been discussed in the family regarding the rights of the children as applied to the children of a naturalized citizen of the United States. Consequently, it was not until 1945—I believe that was the date—when Mr. Patokoski's mother passed away, and in going through her papers and personal effects he found the naturalization certificate of his father. And about that time there were reprisals being taken by the Russian Government for so-called war crimes against persons who had been in the Finnish Army, and especially officers in the Finnish Army. And Mr. Patokoski had attained the grade of lieutenant in the engineers in the Finnish Army through time pro-

motions, so it became necessary for him to get out of Finland just as soon as he could. [5] Otherwise, he might have to go to Russia, an internment camp, for so-called war crimes.

He gathered up what possessions he had and brought along this naturalization certificate. He didn't know the effect of it; had never seen it before, as far as he knows, and came to the United States on a visitor's visa. When he got here he sought to have extensions of the visitor's visa, and at that time I think there were several hearings, according to him, by the Immigration and Naturalization authorities. And about two years after he had first come to this country and had had his first hearing, he learned through communications from the Immigration and Naturalization authorities that he was a United States citizen by birth, but they told him that he had lost his citizenship by virtue of having served in the Finnish military service.

At that time the Immigration and Naturalization Service deemed the voting to be of no effect for the reason that he had served in the Finnish Army. Therefore, they felt he had expatriated himself and consequently they didn't consider the voting. Now they are raising both grounds as grounds for expatriation: One, that he had served in the Finnish Army and had taken an oath of allegiance to the Finnish Government and, second, that he had voted.

That is the gist of the case, your Honor, and our evidence will be to the effect that I have indicated. [6]

Mr. Harr: I don't think I have anything. We

resist these contentions. We say that it is not a legal defense that he did not know that he was a citizen of the United States, if he was a citizen. We concede that he was born a citizen, and he is charged with knowledge of all the laws. We say that the taking of the oaths of allegiance to Finland were voluntary, and therefore that he expatriated himself and, by the same token, his voting caused him to become expatriated.

The Court: Proceed.

URHO PAAVO PATOKOSKI

the plaintiff herein, was produced as a witness in his own behalf and, having been first duly sworn, was examined and testified as follows:

Direct Examination

By Mr. Martin:

Q. What is your full name?

A. Urho Paavo Patokoski.

Q. Where do you now live?

A. In Portland.

Q. What is your address?

A. 2221 Northeast Ainsworth.

Q. How long have you lived there?

A. About six years in that place.

Q. How long have you lived in Portland?

A. Nine years and eight months, about. [7]

Q. Do you consider Portland your permanent residence? A. Where I lived at that time?

Q. Do you understand my question? Do you consider Portland your permanent residence?

(Testimony of Urho Paavo Patokoski.)

A. Yes.

Q. What is your business, Mr. Patokoski?

A. Building contractor.

Q. How long have you been so employed?

A. Nine years here.

Q. Did you do that kind of work before you came to Portland? A. Yes.

Q. For how long?

A. About more than ten years, anyway—about twelve years, or something.

Q. Where was that? A. In Finland.

Q. When did you come to Portland?

A. From Finland.

Q. What year? A. 1947.

Q. Did you bring your family with you?

A. Yes.

Q. How many members of your family are there? A. Three sons and my wife.

Q. Where were you born, Mr. Patokoski? [8]

A. Merijarvi, in Finland, in 1907, July 19th.

Q. Who was your father?

A. Matti Niemela.

Q. What was your mother's name?

A. Aleksandra Niemela.

Q. Had your father ever been in this country?

A. Yes.

Q. Was he married when he was in this country?

A. No.

Q. When was he married?

A. I don't know.

Q. Was it after he returned to Finland?

(Testimony of Urho Paavo Patokoski.)

A. Yes.

Q. Did he ever come back to this country after he went back to Finland? A. No.

Q. Now, did your father ever tell you anything about his visit to the United States?

A. He said some time that he was a citizen.

Q. Did he ever tell you anything else?

A. No.

Q. Did you ever ask him whether you had any citizenship rights?

A. No, we didn't understand.

Q. You say you didn't understand anything about that [9] situation? A. No.

Q. Did you ever talk with your mother about it?

A. Pardon me?

Q. Did you ever talk with your mother about it.

A. No.

Q. Did you ever talk with anybody else in Finland about it? A. No.

Mr. Harr: Your Honor, for the sake of the record I should like to urge an objection to this line of inquiry because we say it doesn't make any difference whether he was told or whether he made inquiry as to his citizenship.

The Court: Admitted subject to the objection.

Q. (By Mr. Martin): Did you ever visit the American consul?

A. Not before I make application for this trip.

Q. How far did you live from where the American consul was located? A. About 600 miles.

Q. The nearest American consul was where?

(Testimony of Urho Paavo Patokoski.)

A. In Helsinki.

Q. Now, did you serve in the Finnish Army?

A. Yes.

Q. When did you first serve in the Finnish Army? A. In 1928.

Q. Were you called before that? [10]

A. Yes. We had that in 1926 there.

Q. You were called the first time in 1926?

A. Yes.

Q. Did you serve at that time?

A. No, only the draft, registered.

Q. You registered at that time?

A. Yes.

Q. But you did not go into the service?

A. No.

Q. Was that a universal service?

A. Yes, it is.

Q. Did everybody have to serve?

A. Yes, all men.

Q. At what age did they have to go into the service? A. I think it was 20 years.

Q. When they became 20 years old?

A. Yes.

Q. What were you required to do when you entered the service? A. Pardon me?

Q. Did you have to take an oath? A. Yes.

Q. How did you take it and where did you take it?

A. Well, we take—I don't remember in what way, but we stand up there, but we don't say anything.

(Testimony of Urho Paavo Patokoski.)

Q. Did you have to say any words or repeat any words of [11] any kind?

A. No, I don't remember of any.

Q. Did you have to hold up your hand in any way? A. Yes.

Q. How many were there present when you took it? A. How many men?

Q. Yes.

A. Maybe two or three hundred at the same time. All our troop.

Q. Your entire troop went in at that time; is that right? A. Yes.

Q. And that was all there was to the entry of yourself into the military service of Finland; is that right? A. Yes.

Q. Did you serve then in the military?

A. Yes.

Q. For how long?

A. That first time 15 months, and the second time 10 months, about, and the third time a little over 3 years.

Q. When was the second time you went into the service?

A. What we call the Winter War, 1939.

Q. You served 10 months at that time?

A. Yes.

Q. When was the last time that you went into the service, then, the third time? [12]

A. It was 1940. I don't remember—October or something, 1940.

(Testimony of Urho Paavo Patokoski.)

Q. When did you get out of the service at that time? A. '44, it was.

Q. What rank did you have when you went in the service the first time? A. Pardon?

Q. What rank?

A. Well, I started, you mean? I don't understand that question.

Q. Were you a private or lieutenant?

A. No, sergeant.

Q. Sergeant? A. Yes.

Q. That was the rank that you had the first time? A. Yes.

Q. When you went into the Army the first time?

A. Yes.

Q. What were you the second time?

A. The same thing.

Q. What were you the last time?

A. Second lieutenant.

Q. Did you apply for any advancement to second lieutenant? A. No.

Q. Did you apply for any candidate school or officership, [13] or anything like that?

A. No.

Q. What is the lowest rank there is in the Finnish Army? A. Pardon?

Q. What is the lowest rank there is in the Finnish Army?

A. I don't understand the question.

Q. What is the lowest soldier there is in the Finnish Army? A. Corporal.

Q. Corporal? A. Yes.

(Testimony of Urho Paavo Patokoski.)

Q. How is it that you started out as sergeant?

A. I don't understand the question.

Q. You said when you first went into the Finnish Army you were a sergeant.

A. Yes, when I came out from there.

Q. When you came out? A. Yes.

Q. You were a sergeant? A. Yes.

Q. What were you when you went in?

A. Private.

Q. Is private the lowest?

A. No, that is corporal.

Q. Corporal is the lowest officer?

A. Yes. [14]

Q. What is the lowest soldier? Private?

A. Yes.

Q. So you went in as private? A. Yes.

Q. And you came out as sergeant the first time; is that right? A. Yes.

Q. And the second time you went in as sergeant?

A. Yes.

Q. What were you when you came out?

A. Lieutenant.

Q. Lieutenant? A. Yes.

Q. Then the third time you went in as a second lieutenant? A. Yes.

Q. Were you still a second lieutenant when you were released from the service? A. Yes.

Q. You were still a second lieutenant then in 1944, when you got out of the Army?

A. 1944. I think it was 1944.

Q. But you were still a second lieutenant?

(Testimony of Urho Paavo Patokoski.)

A. Yes.

Q. When you went into the Army again in 1939—

A. No. [15]

Q. Wait a minute. Listen to my question. When you went into the service in 1939—that is the second time—did you have to take an oath?

A. No.

Q. When you went into the service the third time—in 1942, was it?

A. '40.

Q. When was it?

A. '40.

Q. In 1940 when you went in that time did you have to take an oath?

A. No.

Q. So the only time you took an oath was the first time, when you went into the service as a private?

A. Yes.

Q. Now, when did your father pass away, Mr. Patokoski?

A. I would say about 1929.

Q. When did you change your name?

A. 1939.

Q. Why did you change it?

A. Well, because this Niemela is not our real name. Patokoski is our real name. My father, he bought some house at that time, when he was a young man, and that house's name was Niemela and they started calling him that.

Q. Do I understand that his right name was Patokoski, but [16] that he had lived in somebody else's house when he was a small boy?

A. Yes.

Q. And the people who kept him, their name was Niemela?

A. Yes.

Q. So they called him Niemela?

A. Yes.

(Testimony of Urho Paavo Patokoski.)

Q. Then when you found out what your right name was you had it changed; is that right?

A. Pardon?

Q. When you found out what your right name was you had it changed? A. Yes.

Q. And have you been using the name Patokoski ever since 1939, when you had it changed?

A. Yes.

Q. Now, when is the first time that you saw your father's naturalization papers for United States citizenship?

A. Well, when my mother brought out that paper before she died. He left that paper, and I saw that paper.

Q. How long before she died did you see the paper? A. About one week.

Q. When did she pass away?

A. 1945, I think.

Q. Did you go see anybody in Finland about that paper [17] at that time? A. No.

Q. Did you have any desire to come to the United States? Did you want to come to the United States? A. When?

Q. In 1945. A. No, in '47.

Q. Well, when did you decide that you wanted to come to the United States?

A. Well, that is after we finished our war, when I got out from the war. And I started thinking if I can make some trip to America. I wouldn't remember—that was 1945 or '44. Possibly it was 1945, when I write a letter to American consul, to Hel-

(Testimony of Urho Paavo Patokoski.)

sinki, to find out if ther is anything possible to make a trip. And I don't remember what—I got an answer, anyway, and they explained to me what I had to do, and also I had to explain for them why I will make that trip. And after that I make my application.

Q. Did you have any idea at all that you were a United States citizen? A. No.

Q. What were the circumstances of your leaving Finland to come to the United States? Just tell exactly how it came about, why you left and so on.

A. Well, that is very difficult to explain, because I make [18] my application to come to the United States, and when I make this application they explain further for me if I will wait about six months, six more months, I can go as an immigrant. But at the same time happen so many things, and we have very hard pressure by communists in Finland at that time because we lost the war, and military officers from Russia occupied in Finland some cities, main points, and they were communists, and our home communists, they make list of some officers who had served in Finnish Army, and some officers sent out from Finland to Russia for imprisonment. Now when I could have visa to America—also my friends find paper, or some notebook, where here is my name, and they might send me to Russia. When they explained for me in consulate of United States that if I wait six more months I can enter by immigrant visa, but I said over there I don't can

(Testimony of Urho Paavo Patokoski.)

wait any more; if I can possibly get my student visit I had to leave.

Q. In other words, you were afraid that you might be picked up and sent to Russia, is that correct?

A. That is very hard to know, what happens after that, if I had been.

(Short recess.)

Q. I think we had just reached the point where you had to leave Finland, you felt, because you might possibly be charged with war crimes and be sent to Russia as having been an officer in the Finnish Army; is that right? [19] A. Yes.

Q. Where were you living at the time that you made your application to come to this country?

A. I lived in Oulu.

Q. Yes. Is there an American consul there?

A. No.

Q. How far is Oulu from Helsinki?

A. About 600 miles.

Q. So you had to go to Helsinki to make your application? A. Yes.

Q. Now, do you know what would have happened to you if you had not gone into the Finnish Army when you were first called to register?

A. Well, that is pretty hard to know, because everybody had to go. There isn't any question.

Q. What if you didn't go?

A. Well, they would pick you up.

Q. They would pick you up? A. Yes.

(Testimony of Urho Paavo Patokoski.)

Q. And do what?

A. And take you over to the service.

Q. What if you refused to serve after they picked you up? A. Well, put you in jail or something.

Q. Did you vote while you were in Finland?

A. Yes. [20]

Q. How many times did you vote, do you remember? A. I remembered one time.

Q. Do you remember when that was?

A. In Oulu.

Q. When, what year?

A. I don't remember, even, what year, but after the war times.

Q. It was after the second World War was over?

A. Yes.

Q. Do you have a recollection of just voting one time? Is that the best of your recollection?

A. Pardon me?

Q. Do you just recall voting the one time in 1946 or thereabouts?

A. Yes. I remember because our war is over, and we stopped shooting and make peace, and we have our home communists and the Russian communists and the election propaganda, so the only way we can do over there at that time everybody who can had to vote.

Q. In order to try to preserve the Finnish Government from the communists everybody was asked to vote. Is that my understanding of what you are trying to say? A. Yes.

Q. Now, was that the reason you voted?

(Testimony of Urho Paavo Patokoski.)

A. Yes. [21]

Q. Is that the only time you can remember voting?

A. I don't remember any other time.

Q. Did you have to register to vote?

A. No.

Q. How did they determine whether you were entitled to vote or not?

A. Well, they take the register, what they call—the minister, church minister, he keeps all the registers.

Q. In Finland the church minister keeps track of all the registrations? A. Yes.

Q. They keep track of where you are born and where you live also?

A. Yes, sir. Also we have a register by covenant, but they have to work to get it, make a book.

Q. You don't have to make any extra registration of any kind in order to vote? A. No.

Q. Now, you finally came to this country?

A. Yes.

Q. When did you come to this country?

A. 1947.

Q. Did you have your family with you?

A. Yes.

Q. And where did you come first? What city did you arrive in? [22]

A. Well, we came to New York first.

Q. New York City? A. Yes.

Q. Where did you go from there?

A. To Portland.

(Testimony of Urho Paavo Patokoski.)

Q. You came directly to Portland?

A. Yes.

Q. You didn't stay in New York more than just a few days?

A. Oh, about four days. We stopped in Ohio only one day.

Q. You visited some friends there, did you?

A. Yes.

Q. Then you came to Portland? A. Yes.

Q. And you have been here ever since?

A. Yes.

Q. Now, did you go to the Immigration and Naturalization office here in Portland?

A. Pardon me?

Q. Did you see the Immigration and Naturalization Service in Portland here? A. Yes.

Q. What was your purpose in going to their office?

A. The first time, when we stay here six months, we have to make application for an extension, six more months.

Q. Did you get an extension of time? [23]

A. No, we make that application for six more months, and they said that is O.K.; they will call up for us when they know about it. And we waited for a call and we waited about six more months at the time, after we make six more months' application. At that time they said for us—that is all right, and they will call for us when they know. And I don't remember how many more months that we

(Testimony of Urho Paavo Patokoski.)

got. No, they don't give any more extension of time for us.

Q. So they notified you that they would not give you any more extension after you waited and made two additional applications? A. Yes.

Q. Did they give you a hearing? Did you have a hearing?

A. Yes. I don't remember even that time, but they called some time from the immigration office——

Q. You came up to the immigration office?

A. Yes.

Q. They asked you questions and you gave them answers? A. Yes.

Q. When did you first tell them about your father's naturalization certificate?

A. I don't remember what time, but when they asked me what is my citizenship, and I then—I feel sure I am Finland, but my father was citizen of United States.

Q. Did you tell them anything about what your wish was [24] to find out whether you were or were not a citizen of the United States?

A. Only I had my father's citizen papers, and I left that at the immigration office.

Q. You left it with them?

A. Yes.

Mr. Martin: Do you happen to have that?

Mr. Harr: Yes (handing document to counsel).

Mr. Martin: I would like to have this marked.

(Testimony of Urho Paavo Patokoski.)

(Certificate of Naturalization of Matt Niemela, dated August 13, 1894, was thereupon marked Plaintiff's Exhibit 1 for identification.)

Mr. Martin: Would you give that to the witness.

Q. Mr. Patokoski, you have Plaintiff's Exhibit 1 for identification. Is that the naturalization certificate that you brought with you from Finland for your father's naturalization in the United States? A. I think so.

Q. That is the one you brought with you from Finland?

A. Yes. I don't remember even, but I remember that it like this.

Mr. Martin: May the Court please, I move the introduction of Plaintiff's Exhibit 1 for identification in evidence.

Mr. Harr: No objection. [5]

The Court: Admitted.

(The naturalization certificate referred to was received in evidence as Plaintiff's Exhibit 1.)

Q. (Mr. Martin): Did you receive any word from the Immigration and Naturalization Service after that regarding your citizenship?

A. Yes, I don't remember—we got letter that I never had been citizen of the United States.

Q. The letter was from the Immigration Service?

A. Yes, from Portland.

Q. They said that you were not a citizen of the United States? A. Yes.

(Testimony of Urho Paavo Patokoski.)

Q. Did they say whether you had ever been?

A. No.

Q. They said you had never been a citizen?

A. Yes.

Q. Did you get any further instructions from the Immigration and Naturalization Service?

A. No. We got letter after—when we lived here two years we got letter from Washington, D. C., and they explained that I was citizen before but positively lost my citizenship because I went into Finnish Army.

Q. In other words, when you heard from Washington, D. C., [26] then they told you that you had been a citizen of the United States but had lost your citizenship; is that right? A. Yes.

Q. Did you get any further instructions from the Immigration and Naturalization Service with regard to your staying here in Portland?

A. Well, at that time it is pretty hard—when we spent about one year here, and our friends in Portland and Astoria, they made application for Congress and they asked for us we stay permanently here, because Russia has some more ultimatum to Finland, and we don't know what happened over there. Also, at that time if we have to go back to Finland it is very difficult for us, because I have to take care of my family and our son is very small at that time.

Q. How old are your sons now, Mr. Patokoski?

A. Eighteen and sixteen and fourteen.

Q. Are they going to school here now? Do they

(Testimony of Urho Paavo Patokoski.)

go to school here? A. Yes.

Q. Did you get any orders from the Immigration and Naturalization Service to leave Portland and go back to Finland? A. Yes.

Q. Because of a private bill that was introduced in Congress, though, you didn't have to go; is that right? [27] A. Yes.

Q. Have you received any further orders within the last year?

A. No, no, because we have private bill in Congress.

Q. Did you get a notice last summer?

A. Yes, last summer we have that we had to leave. I don't remember; June 30th or July 30th; something like that.

Q. Of last year?

A. Yes—no, I don't remember if it was last year or this year.

Q. Well, either last year or this year you were required to leave within a short period of time; is that right? A. We had also last year.

Q. Now, have you ever renounced your citizenship as a United States citizen? In other words, have you ever made a public statement that you were not a citizen of the United States?

A. Well, after all, now, I can understand myself—at that time when we lived in Finland, this was hard times, and much different times, and we have to go under so hard pressure all the time, because every man over there had to go to the service.

(Testimony of Urho Paavo Patokoski.)

The Court: Ask him the question again. He is not answering your question.

Q. (By Mr. Martin): I don't think you understood my [28] question, Mr. Patokoski. Other than being in the military service and voting in Finland, have you ever proclaimed or said that you were not a United States citizen?

A. No, I don't think so.

Q. You have not voluntarily become a citizen of any other country, have you? A. In Finland?

Q. Yes.

A. Well, everybody who born there is a citizen.

Q. If they are born over there they are considered a citizen of Finland? A. Yes.

Q. Now, when you became of age, when you became 21 years of age, did you ever tell anyone that you were not a United States citizen? A. No.

Q. Did you understand my question?

A. Pardon me?

Q. What I am trying to ask you—maybe you didn't understand me—when you became 21 years old, and ever after since you became of age up to the present time, have you publicly or in connection with any matter at all claimed that you were not a United States citizen? A. No.

Q. Now what is your claim at the present time? [29]

A. Because I don't know that in Finland.

Q. You didn't know whether you were or were not? A. No, I don't have any idea.

Q. When you found out you were a United

(Testimony of Urho Paavo Patokoski.)

States citizen at birth have you since then contended that you were a United States citizen?

A. Yes, and when I know that after two years what we spent here, and that comes out hope for me that I will be a citizen.

Q. Since that time you have been contending that you are a United States citizen? A. Yes.

Q. Have you ever done anything, to the best of your knowledge, other than this service in the Finnish Army and voting in Finland, to divest yourself of United States citizenship?

A. I don't think so.

Q. Now, this private bill that you spoke of in Congress, is that pending now? A. Not now.

Mr. Martin: You may cross-examine.

Cross-Examination

By Mr. Harr:

Q. You have tried many times to get a bill through Congress to permit you to stay here in this country? A. Yes.

Q. Your first bill was in the year 1948? [30]

A. I think so, yes.

Q. And the next one 1949? A. Yes.

Q. Two bills in 1951, a Senate and House bill?

A. Yes, I think so.

Q. Four bills in 1953?

A. I am not certain about that.

Q. Well, there were two, a House bill and a Senate bill in January of 1953? A. Possibly.

(Testimony of Urho Paavo Patokoski.)

Q. And a House bill and Senate bill later in 1953. Congress turned you down on all of those applications? A. Yes.

Q. When was the last bill presented to Congress, do you remember or do you know?

A. In this year.

Q. How many bills did you present after 1953?

A. I don't can say how many.

Q. Your immigration file has some of the applications but not all of them. There were, I believe, Senate and House bills in 1955. Are those the last ones that you presented? A. Yes, 1955.

Q. Those were turned down? A. Yes.

Q. Now in 1948 you had a hearing before the Immigration Service? A. Yes.

Q. At that time you had your minister interpret for you? A. Yes.

Q. And in that entire hearing the questions were translated by the minister and you gave your answers through the minister; is that correct?

A. Yes.

Q. So you did at that time understand all the questions that were given to you? A. No.

Q. You understood them after they were interpreted to you by the minister? A. Yes.

Q. I should have said translated to you. Now at that time, in 1948, September of '48, you said you were a carpenter, didn't you? A. Yes.

Q. You were not a contractor at that time?

A. Well, I take a small job at that time, but mostly I work as carpenter.

(Testimony of Urho Paavo Patokoski.)

Q. You came over here from Finland, did you not, to learn and study our construction methods?

A. Yes.

Q. So that when you could go back to Finland you could [32] put those practices into operation?

A. Yes.

Q. And do more for your people? A. Yes.

Q. Now that is the reason you came over here, to study; is that right? A. Yes.

Q. You were about 40 years old when you came to this country? A. Forty years, yes.

Q. You were asked the question, "Of what country are you a citizen or subject at this time?" And you answered, "Finland." Is that correct?

A. Yes.

Q. You thought you were a Finnish citizen at that time? A. Yes.

Q. You had always believed that you were a Finnish citizen; is that not correct? A. Yes.

Q. You had never been a citizen of any other country. That is what you said? A. No.

Q. You had not been. Under the Finnish law when would you become of age? How old would you have to be?

A. Pardon me. I don't understand that.

Q. You know what I mean by becoming of age, when you reach [33] the age of majority, when you can vote and do those things.

A. Oh, 21 years.

Q. Twenty-one years? A. Yes.

Q. Now when you were born you were a citizen

(Testimony of Urho Paavo Patokoski.)

or you thought you were a citizen of Russia; isn't that right? A. That is pretty difficult.

Q. When did Finland become a nation?

A. Well, we are under Russia at that time when I born, but our government is a little different. We have our own laws——

Q. Your own laws?

A. Yes, and own Congress and own Senate, even at that time.

Q. Did you send representatives to Moscow to participate in the Russian Government?

A. Yes, I think so.

Q. In other words, you were a province or a state?

A. Yes. It is all ruled all over, by the hand of Russia at that time.

Q. How old were you when the first World War ended?

A. Oh, I was born in 1907. Thirteen or twelve years old, I think so.

Q. Is that when Finland became a separate nation by itself? A. Almost '17, 1917.

Q. That is when Finland became a separate nation? [34] A. Yes.

Q. It was a democracy; is that right?

A. Yes.

Q. You voted in free elections at that time, or the people did?

A. Yes, but I don't can vote, no, but the people.

Q. You studied that in school, did you? How you were a democracy? A. Yes.

(Testimony of Urho Paavo Patokoski.)

Q. Was the democracy somewhat similar to our system of government in the United States?

A. I think so. That is the same.

Q. You were not under the domination of Russia after you became a democracy?

A. No, not any more, no. As I read from paper, Finland is the second country what got the democracy after United States.

Q. Yes, there was Czechoslovakia and Finland; is that right? A. Yes.

Q. You had regular elections in Finland, city elections, county and national, just as we have here?

A. Yes, the same.

Q. You went into the Army, you said, when you were 20 years old? [35] A. Yes.

Q. Now, when you reached the age of 21 and from then on until the second World War, your country still continued to be a free country; is that right? A. Yes.

Q. Free elections; anybody could vote?

A. Yes.

Q. Did your father vote, do you know?

A. I don't can't say to that, because I was so——

Q. You were about 20 years old when he died, just about the time you went into the Army?

A. Yes.

Q. Was he living then when you went into the Army?

A. Yes. When I came back after he died pretty soon.

Q. You don't know whether he voted or not?

(Testimony of Urho Paavo Patokoski.)

A. No. That is very hard to say, because I wasn't living home at that time.

Q. Were the people in Finland pretty proud of their right to vote in free elections?

A. Well, that is pretty hard to remember, but about 50 per cent or something, what will vote.

Q. Do the women have the right to vote over there? A. Women?

Q. Yes. A. Yes. [36]

Q. Now you had a pretty good education, didn't you? A. Pardon?

Q. You had a pretty good education?

A. Well, I think so.

Q. Just tell us about what education you did have.

A. Well, I have education from technical school, what we call construction engineer.

Q. That would be similar to our university education here in the United States?

A. Not be the same. That is not so high.

Q. Not quite so high as our university education?

A. No. That is technical school. That is a little lower.

Q. But that is what you trained yourself to be, a construction engineer? A. Yes.

Q. Building homes and buildings?

A. Well, pardon me. Usually we build bigger buildings, building like this, and bridge like that new Morrison Bridge, and highway construction and power-dam construction. Not so much home construction.

(Testimony of Urho Paavo Patokoski.)

Q. After you started working as a construction engineer did you travel a lot or did you remain pretty well at home?

A. Over there? We worked for big company and we called that the Cement Association, and I had to take care of north part of Finland, and I had to say how they could use cement, how they can make concrete.

Q. Was that away from home at that time?

A. Well, usually, how to use cement, highway construction and bridge construction and building construction.

Q. Where was it you had to vote? Did you have to do your voting at home or could you do it away from home?

A. No, I had to go out.

Q. Mr. Patokoski, when you were doing some of these large jobs such as building dams would you go away from home and stay away from home for awhile?

A. Yes, we had to go out.

Q. In Finland could you get what we call in the United States an absentee ballot so that you could vote and mail your vote in? Did you have such a thing in Finland?

A. Yes, it is. I understand now what you mean.

Q. Did you when you were away from home on the job and did others like you take advantage of that, to vote and mail your vote in?

A. Well, they had to pick up from the register's office, but because I was so far from the place I don't can do that. You had to pick up from home place.

(Testimony of Urho Paavo Patokoski.)

Q. So when you were away from home it wasn't easy to get a ballot to mail in; is that right?

A. Well, they had to pick up personally.

Q. Were you always away from home on election day or were [38] you at home at other times when elections were held?

A. I don't know if I understand correctly that question.

Q. I will restate it. Were you at home sometimes when the elections were held?

A. I remember that one time, that 1946 or '45, after war, because my work was in home city and I stayed home at that time.

Q. Is that the only reason you didn't vote before, because you were away from home? A. No.

Q. Why didn't you vote?

A. Well, because I was out from home so much, and I had to be about 270 days out from home at that time, when I worked for that Cement Association.

Q. You were about 40 years old when you came to the United States? A. Yes.

Q. So there would be 19 years that you lived in Finland after you reached the age of 21?

A. Yes.

Q. Are you telling us that during that 19 years there was only one election that you were living at home and could vote?

A. Oh, there is '39 to '45 we don't have any election at that time because we have our war. And I started working [39] for the Cement Association

(Testimony of Urho Paavo Patokoski.)

1937, and I worked—that is government, and we built highways and bridges, and I don't can stay home that time. I finished my school in 1934, and after that I worked for Government of Finland.

Q. When did the nation of Finland, as you state, come under the control of the communists?

A. All our independent time we have to fight against the communists, and in 1930, '34 and '35 very hard time. They like to take over the whole government at that time.

Q. Did you believe in communism at that time?
Did you believe in communism? A. No.

Q. At these elections there would be communists running on the ticket, running for election?

A. Yes, they have ticket also at that time.

Q. And there were some of the communists elected, were there? A. Pardon?

Q. Some of the communists were elected, I suppose?

A. Yes, I think so, yes, but I don't remember how much there was at that time.

Q. Did you take an active part in trying to see that they were not elected?

A. Yes, I was in outside cities, and at that time what happened for me, I am anticommunist accused, because [40] sometimes those communists will come to the job and they start talking and talking over there, and their leader over there, and I have to say something, and at that time they claim, why, that I am anticommunist.

(Testimony of Urho Paavo Patokoski.)

Q. That was after World War II you are talking about? A. No, before.

Q. Before that? A. Yes.

Q. Did you get up and make talks trying to get people to vote against the communists?

A. Well, I don't have any time for that, because I work for an outside city. I don't remember how many men I have in my job at that time.

Q. Talking about your military service a little bit, you went in as a private in 1928?

A. Yes.

Q. I think you said that you were promoted to sergeant, and this promotion was by virtue of your length of service; is that right? A. Yes.

Q. You were a pretty good soldier?

A. Well, usually I did every work what somebody gave for me. I went by my full understanding.

Q. All the boys that went into the service with you in 1928 didn't come out sergeants, did [41] they? A. Not all.

Q. In fact, most of them came out as privates?

A. Yes.

Q. You were promoted to corporal first, I suppose? A. Yes.

Q. Then in 1939 you went in as a sergeant and came out a second lieutenant, from sergeant to second lieutenant?

A. No, first lieutenant after 1939.

Q. In 1939 when you went into the service were you a sergeant then? A. Yes.

Q. Did you go to officers' training school?

(Testimony of Urho Paavo Patokoski.)

A. Yes.

Q. How did you get picked for officers' training school?

A. Because I was construction engineer.

Q. Did all construction engineers go to officers' training school, do you remember? A. Yes.

Q. Did they ask for it? Did they make application for officers' training school?

A. No. No, they had to go, because every people who has some education, higher education, they got officers' training.

Q. You were proud of your country, weren't you? You were proud of your little country of Finland?

A. I don't understand the question. [42]

Q. You were proud of your country?

A. That is new word for me.

Q. You were happy with your country?

A. In Finland?

Q. Yes.

A. Yes, I think so. But I have to say we was happy when we got our independence over there, and everybody knows and the whole world know in all our independent times we have so heavy pressure, like between east and west, and we don't can enjoy—all our living hard over there.

Q. You were ready at any time over there to fight for Finland's independence, weren't you?

A. Yes, I think so.

Q. You state in a letter to the Immigration Service dated October 25, 1948: "It is my convic-

(Testimony of Urho Paavo Patokoski.)

tion to uphold what is right and to oppose injustice and tyranny and therefore I have fought for little Finland which was attacked by a great country. The whole world condemned this attack upon Finland. Looking at it from the human point of view how could I have forfeited any possible claims which I may have had to United States citizenship. I am at all times ready to fight for the rights of this country in which I now live if an assault were made against it."

Now you felt that you were ready at any time, then, to fight for your little country? [43]

A. Yes, that is my feeling because I know nearly every people, every American citizen, will fight to hold freedom.

Q. And you were not ashamed, were you, when you stood up there and raised your right hand and said "I take allegiance to my country"? You were not ashamed, were you? A. No.

Q. You didn't feel ashamed of yourself when you stood up and swore allegiance to your country?

A. I don't have any question over there, because I feel so—every man for freedom feel the same way. But we don't have that question over there. We have to make no oath something like that.

Q. Now, Mr. Patokoski, you said that your service in the Army, being drafted, was involuntary. That is what you said? A. Voluntary?

Q. Involuntary; that you had to go.

A. Yes, I had to go, yes.

Q. And you didn't feel right about going into

(Testimony of Urho Paavo Patokoski.)

the Army, did you? A. What?

Q. You didn't like to go in the Army?

A. Well, I don't have any choice, because I like to live at home. I don't think everybody liked to go in the service.

Q. Many of the other boys who went with you, they didn't like Army service either, did they? [44]

A. They don't like it.

Q. They would rather stay at home?

A. That is right.

Q. They didn't want to go into the service, especially in war time; they didn't relish the uncertainties of Army life. Is that right?

A. That is right.

Q. Now, when you say that your service was involuntary you don't mean to say that your oath was involuntary, do you?

A. Well, that is a question what I have to—they don't even ask who will go. Everybody had to go. They said, "We will go to the church," and they don't explain any of that question there. I don't remember, anyway.

Q. When you went to school didn't you have the flag flying there, and didn't you swear allegiance to your country then, when you were a child going to school?

A. Well, no, they don't have that in Finland.

Q. They have songs to the flag? A. Yes.

Q. They sing patriotic songs? A. Yes.

Q. You were proud of that flag, weren't you?

A. Well, every flag in Finland—if there is an

(Testimony of Urho Paavo Patokoski.)

American flag or any other country flag, we stand up and we take our [45] hat off. If we sing American national hymn I stand up and I take my hat off. The same way for Finnish flag.

Q. Yes. So you at all times were happy, weren't you, that you were a Finn? You were happy that you were living under that flag, the Finnish flag?

A. Well, I don't just take any other country, myself, because I don't know any other country.

Q. You were happy, though, to be under that flag and live as a Finn?

A. Yes, and my people was, what I said before, partly we are happy.

Q. Now, during the war, World War II, Germany was your ally? A. We don't know that.

Q. Germany fought on your side, didn't they?

A. Yes.

Q. And they had troops stationed in your country?

A. Yes—no, we had to went to service, and when we was over there we heard about it, the German soldiers will help us.

Q. Did Germany have airplanes stationed in your country, up in the north, so that they could sink all of the shipping coming into Russia?

A. I think so, yes.

Q. How did you feel about that, ships going into Russia [46] and bringing all those supplies and those munitions into Russia, whom you were fighting? How did you feel about that?

A. Well, at that time we had nobody helping

(Testimony of Urho Paavo Patokoski.)

anywhere. We stayed alone. We didn't have any help except some credit from United States.

Q. That is the Winter War you are talking about. I am talking about World War II.

A. Yes. And after that time the Germans hadn't helped any more Russia. They helped Finland.

Q. Sure. And the Germans were over there with their submarines, were they not, sinking the ships coming into Russia?

A. I don't think so. Not in the Finnish sea, no. But airplanes, their airplanes was there.

Q. Were they located in the north end of Finland?

A. Yes, all over Finland; not even the north, but all over.

Q. What did you think about the Germans sinking all that shipping? Were you glad about it or unhappy?

A. I think so, that we are happy, because we asking help so many places and nobody had helped.

Q. You were glad the Germans came and helped you?

A. Yes. They helped a lot.

Q. What did you think about Great Britain sending ships up there and sending munitions to the Russians? What did you think about Great Britain?

A. At that time I think the Germans hadn't sent any, but [47] I know America sent help to Russia at that time.

Q. What did you think about that?

A. We feel very bad, because we have understanding over there that America is our best friend,

(Testimony of Urho Paavo Patokoski.)

and if some people can help they say that America will help. And I heard over there when I was on the line the President of the United States sent some order we have to stop; we don't get any more here, and we were stopped right away. And we believe so much in the United States——

Q. After the United States kept sending those munitions and sending other help to Russia were you not happy to see those ships sunk?

A. No, we feel awful sorry, because we understand that the United States is our friends, and we want so much to help her.

Q. But they were not helping you. They were helping Russia.

A. Well, we don't understand that. But we know that the United States sent help by Norway, by the railroad there, and they call for us and we have to stay there; we don't can cut this line. That make very bad feeling for us, because we have to stay on the line. And the Russians used American airplanes and American bullets for us, and we don't can cut the line. That is very funny case.

Q. I don't know what you mean. I don't quite understand you. You spoke of a line. What line?

A. Our defense's line over there in Finland; our defense line [48] over there in Finland.

Q. The line against whom? Russia or Norway?

A. The border, Finnish border.

Q. What border?

A. Between Russia and Finland. I know my family at that time was—many times they have to

(Testimony of Urho Paavo Patokoski.)

leave at midnight and after midnight and went to bomb shelter.

Q. Let's go back just briefly, Mr. Patokoski, to the hearing before the Immigration Service in 1948, September, 1948. Do you remember that you took an oath before you testified at that hearing?

A. Yes, I did.

Q. The same kind of an oath that you took here?

A. Yes.

Q. You testified there to tell the truth, didn't you?

A. Yes.

Q. You were asked this question:

“Q. During your residence in Finland did you vote in political elections? A. Yes.”

Was that your answer?

A. Yes.

Q. “Q. Up until when? A. 1946.”

A. Yes.

Q. “Q. In what kind of elections did you participate? A. The last election was for [49] the purpose of electing city officials. I have voted at elections for state officials.

“Q. When did you last vote for state officials?

A. I am not sure but I believe 1944 or 1945.”

So there you gave the impression to the hearing officer that you voted in other elections than the one that you spoke of here today?

A. Yes. That is at the same time, what I mean.

Q. Is it possible that you are wrong and that you might have voted in earlier elections?

(Testimony of Urho Paavo Patokoski.)

A. I really don't remember that.

Q. You don't remember?

A. No. That is only what I remember that one time, and that time I remember better because now we have nine more years. That is true.

Q. You were asked the question:

“Q. At the time of your entry into the United States on February 24, 1947, did you have any intention of remaining permanently in this country?”

“A. No.”

Do you remember that? A. Yes.

Q. “Q. How long did you intend to remain at that time? A. One year.” [50]

A. That is right, yes.

Q. What was the reason you came over to this country and you wanted to stay one year? What did you tell the hearing officer?

A. I liked studying that building construction and architecture.

Q. Did you want to study our architecture and our construction system?

A. I study every day.

Q. Why did you want to do that? Why did you want to make those studies?

A. Well, I said I studying all the time, all the year.

Q. Yes. Why?

A. Why? Because I like it to know more.

Q. Why did you come here to study?

A. Well, everybody like a better education.

Q. How were you going to apply that education?

(Testimony of Urho Paavo Patokoski.)

A. I don't understand the question.

Q. What were you going to do with your education? Were you going to try to build bigger dams for Finland or better construction methods?

A. Yes, that is my idea.

Q. That was your plan? A. Yes.

Q. Your plan was to come here and learn all you could [51] in that year and go back to Finland and do a better job? A. Yes.

Q. Now, you testified that you practically had to leave Finland overnight: that they were out looking for you and they were going to send you over to Russia. How do you reconcile that statement with your statement now that you were anxious to come and learn what you could so you could go back there?

A. What I said before, when I make application for this visa, temporary visa, at the same time I got to know the communists like to take me over to Russia or something, by a Soviet military officer, and that happen the same time, so many things.

Q. You must not have thought it was so dangerous, then, if you were coming over for some study and then you were going to go back?

A. Yes, that was my first idea.

Q. Now the draft, that was practically universal? They do that all over the world now, don't they? A. Yes, it is.

Q. And the boys have to go whether they like it or not?

A. Yes, everybody, every man has to go.

(Testimony of Urho Paavo Patokoski.)

Q. And it was the same in Finland?

A. Yes.

Q. Are you quite sure that you didn't take an oath the second and third time you went into the service? A. No.

Q. How about at the academy, when you were made an officer? A. They don't ask any more.

Q. You didn't have to pledge allegiance to your country? A. No.

Q. When you were in Finland and while you were in the Army you belonged to some voluntary organization, didn't you? A. Yes.

Q. Tell us about that.

A. That is almost the same as what is National Guard here, National Guard.

Q. That was a voluntary organization?

A. Yes.

Q. You didn't have to belong to that?

A. No, not necessarily.

Q. What was the purpose of that National Guard?

A. Because the communists—that is pretty hard to explain for me, but anyway, the other side is communists and the other side is just National Guard.

Q. It was to protect Finland, was it not? It was a National Guard to protect Finland?

A. Yes.

Q. Did you take an oath when you entered the National Guard?

A. They don't ask for an oath. [53]

Q. You have said that all the while until you

(Testimony of Urho Paavo Patokoski.)

came to this country and until you received the letter from the Immigration and Naturalization Service, up to that time you considered yourself always as being a Finnish citizen. That is right, isn't it? A. Yes.

Q. You said you were under duress. Do you know what that means? A. No.

Q. It means that at the time you went into the service you were forced to do something; you were compelled to do something that you didn't want to do; you were forced to do it.

A. Well, at that time I was about 20 years old. I don't think about it so much, what I had to do.

Q. The way you felt about it was about the same way all the other boys felt about it?

A. Yes.

Q. That went into the service the same time as you did? A. Yes.

Q. But you didn't object at that time or you didn't object to taking the oath, did you?

A. Well, only that one time when we went to the church——

Q. You didn't mind taking the oath, did you, of allegiance to your country?

A. I don't think so. [54]

Q. What? A. I don't understand quite.

Q. When you went into the Army you said there was a whole troop of you that took the oath?

A. Yes.

Q. You raised your hand? A. Yes.

Q. You didn't mind taking the oath, did you,

(Testimony of Urho Paavo Patokoski.)

that you would bear allegiance to your country?

You didn't mind that, did you? A. No, no.

Mr. Harr: I think that is all.

Redirect Examination

By Mr. Martin:

Q. Mr. Patokoski, you were asked whether you were quite sure you did not take an oath when you entered the service the second and third times, and you answered no. Don't you know whether you took an oath the second and third times when you went in the service? Did you take an oath the second time you went in the service? A. No.

Q. The third time you went in the service did you take an oath? A. No, only that one time.

Q. You are quite sure of that? You are sure you didn't [55] take any oath either of those last two times?

A. No, only that first time when I went.

Q. That is the only time you took an oath?

A. That is the only time what I had to do it.

Q. You are sure you didn't take an oath the second and third times?

A. No, they didn't ask about it.

Q. You mean yes, you are sure you didn't?

The Court: Oh, I know what he means.

Mr. Martin: I believe that is all.

Mr. Harr: I believe there was one other question I wanted to ask the witness. May I ask him now?

The Court: Yes.

(Testimony of Urho Paavo Patokoski.)

Recross-Examination

By Mr. Harr:

Q. Mr. Patokoski, here is a document I would like to show you. Would you tell us what that is. What is it?

A. This is my birth certificate, I believe. I think so.

The Court: Can you stipulate what it is?

Mr. Martin: I will stipulate that this document, which can speak for itself, is a certificate of nationality which states that he was born on July 19, 1907, at Finland, and so far as known is a citizen of the Republic of Finland. It is for the purpose of securing a passport or visa to come to this country, and on the back is a certificate of his [56] date of birth.

Mr. Harr: Is this not for the purpose of getting a visa to go back to Finland, dated January 22, 1956?

The Court: You can argue it later. Put it in evidence.

Q. (By Mr. Harr): Did you make an application to go back to Finland in 1956? A. No.

The Court: How about your dates? You mean this year?

Mr. Harr: Yes, January 22, 1956.

Mr. Martin: I believe that is something that the Immigration and Naturalization Service required. I don't think that Mr. Patokoski applied for a visa to go back to Finland.

The Court: He says he didn't.

(Witness excused.)

Mr. Harr: Your Honor, I would like to introduce two exhibits, if I may have them marked, please.

The Court: Let's put the exhibits in later. I will find time to do that. [57]

FRANZ W. KOSKINEN

was produced as a witness in behalf of the plaintiff and, having been first duly sworn, was examined and testified as follows:

Direct Examination

By Mr. Martin:

Q. Reverend Koskinen, what is your full name?

A. Franz William Koskinen.

Q. Where do you live?

A. 2133 North Skidmore Court, Portland.

Q. What is your occupation or profession?

A. Pastor of the Messiah Lutheran Church of Portland.

Q. Do you know Mr. Patokoski?

A. Yes, I do.

Q. How long have you known him?

A. I have known him for several years, but more intimately the last two and a half years, when I have been pastor of this church to which he belongs.

Q. Is he a member of your church?

A. Yes, he is.

(Testimony of Franz W. Koskinen.)

Q. In connection with this hearing that is being held here today did you translate some papers or documents?

A. Yes, together with my wife, Ida M. Koskinen, we translated several items.

Q. Was one of those a draft law of the Republic of Finland? A. Yes. [58]

Q. Do you recall offhand what the draft law specified as to the punishment of individuals who did not comply with it?

A. Offhand I can't recall.

Q. If I were to hand you these exhibits would you be able to refresh your recollection from them?

A. I believe so.

Q. Do you recall now from your examination of those documents what the punishment was for evading service?

A. If you will give me time to check over.

Mr. Harr: Your Honor, I think the laws would speak for themselves. If the pastor has a translation of it, that likewise would speak for itself.

Mr. Martin: We have a translation there, if counsel wants to see a copy of it.

The Court: We don't need it now. What does the law say?

The Witness: I can read it here for you if you wish. This is Section 40:

"A draftee, without legal reason, not appearing for military service or has not, as prescribed in Section 24, sent his agent in his place, or who has not through the consular service sent proof of his

(Testimony of Franz W. Koskinen.)

acceptability or inacceptability for military service, shall be punished by not [59] less than five nor more than one hundred day fines or not more than one year of imprisonment. The same law shall apply to one who leaves the draft center before he has received the certificate prescribed by Section 26, or who does not appear at a specified time for special examination."

Q. (By Mr. Martin): What about a person who leaves the country illegally or does not submit himself to service? I am referring to Section 39.

A. Section 39:

"Any man, seventeen years of age or before he has fulfilled his obligations in the regular army or who has not been released from military service, who leaves the country illegally, shall be punished by not less than fifty nor more than two hundred day fines or imprisonment of not less than three months or more than one year; and shall be drafted into regular service if he is qualified and has not yet reached the age of thirty-two years."

The Court: Day fines?

The Witness: Day fines.

The Court: What does that mean?

The Witness: That is the best translation we could [60] give to that. It is a literal translation.

The Court: You don't know what it means?

The Witness: Day fines, yes, I would—well, the best interpretation that I can put upon that would be that it is a day in prison. He is fined so many

(Testimony of Franz W. Koskinen.)

days. But we made a literal translation of that here.

Q. (By Mr. Martin): Referring to Article I, Section 1, would you read what the requirement is for service as to any man in Finland.

A. "For the defense of the fatherland and lawful order of society, every man in Finland is responsible for military service."

Q. Now, Reverend Koskinen, did you also make a translation of a document purporting to be a change in the name of the Patokoski family from Niemela to Patokoski?

The Court: The Government is not contending anything about that, is it?

Mr. Martin: I don't know. We want to have the record show that the name was changed so that there will be something in the record to show that the father, Matti Niemela, is actually the father of this man.

The Witness: We translated the clergy's certificate from the Cathedral Parish of Oulu, Diocese of Oulu, for the purpose of seeking citizenship, and here it mentions the two names, "Patokoski, formerly Niemela," and then in the second [61] paragraph it says: "The family name 'Niemela' was changed by the decision of the Governor of the Province of Oulu on 2/9/1939 to 'Patokoski.'"

This is an official document signed by E. Jokela, Assistant Pastor of that office.

Mr. Martin: All right. Thank you very much, Reverend.

Mr. Harr: No questions.

(Witness excused.)

The Court: There is no pretrial order, I believe, in this case, so you gentlemen, after I leave, give Mrs. Mundorff your exhibits and tell Mr. Beckwith what you want to do about their being admitted. I will tell you now they will all be admitted subject to whatever objections may be stated by you.

Now, if you have any law you want me to consider, give it to me in written form, and after you do that then I will hear you in argument.

Will you want to submit some authorities?

Mr. Martin: I would like to do that.

The Court: How much time would you like?

Mr. Martin: Could I have thirty days?

The Court: Yes. Give Mr. Harr thirty days, and then I will hear you in oral argument after that.

(Certified copy of Application for Non-immigrant Visa, dated February 4, [62] 1947, was marked and received in evidence as Defendant's Exhibit 2.)

(Certified copy of Certificate of Nationality, dated July 22, 1955, was received in evidence as Defendant's Exhibit 3.)

(Clergy Certificate as to Change of Name was marked and received in evidence as Defendant's Exhibit 4.)

(The Draft Law of Finland, together with a translation of portions thereof, was marked and received in evidence as Plaintiff's Exhibit 5.)

(The record file of the United States Immigration and Naturalization Service relating to plaintiff was marked and received in evidence as Defendant's Exhibit 6.)

(Whereupon, proceedings in the above-entitled cause on said day were concluded.) [63]

REPORTER'S CERTIFICATE

I, John S. Beckwith, an Official Reporter of the above-entitled court, hereby certify that on October 29, 1956, I reported in shorthand the testimony and proceedings had upon the trial of the above-entitled cause before Honorable Claude McColloch, Chief Judge; that thereafter I prepared a typewritten transcript from my shorthand notes, so taken, and the foregoing transcript, Pages 1 to 63, both inclusive, constitutes a full, true, and accurate transcript of said testimony and proceedings so taken by me on said date as aforesaid, and of the whole thereof.

Dated at Portland, Oregon, this 28th day of February, 1957.

/s/ JOHN S. BECKWITH,
Official Reporter.

[Endorsed]: Filed September 20, 1957. [64]

[Title of District Court and Cause.]

DOCKET ENTRIES

1955

July 22—Filed complaint.

July 22—Issued summons—to marshal.

July 22—Filed plaintiff's motion for temporary restraining order, etc.

July 22—Entered order withdrawing ptff's application for restraining order pendente lite.

July 25—Filed summons with marshal's return.

Sept. 19—Entered order setting for trial on Nov. 1, 1955.

Sept. 16—Filed answer.

Sept. 27—Entered order striking trial date of Nov. 1, 1955.

Nov. 25—Entered order setting for pretrial on Jan. 3, 1956.

1956

Feb. 1—Filed ptff's motion for leave to file supplemental complaint attached.

Feb. 1—Filed reply.

Feb. 1—Filed & entered order granting leave to file supplemental complaint & giving def. until July 9, 1956, to answer.

July 6—Filed answer to supplemental complaint.

July 9—Filed interrogatories to ptff.

July 18—Filed answer to interrogatories.

Aug. 16—Entered order setting for trial Oct. 2nd.

Sept. 17—Entered order resetting for trial Oct. 30, 1956.

Oct. 26—Filed amended answer.

Oct. 29—Record of hearing on trial, evidence ad-
duced, ptff. given 30 days to submit brief
& deft. given 30 days to answer.

Dec. 13—Filed plaintiff's brief.

1957

Jan. 18—Filed answering brief of defendant.

Jan. 24—Entered order setting case for argument
on Monday, Feb. 4th.

Feb. 4—Record of hearing re citizenship. Deft.
given to Mar. 4th to file brief & transcript
of testimony.

Mar. 14—Filed memo of decision—Plaintiff to sub-
mit findings.

Apr. 1—Filed & entered Finding of Fact & Conclu-
sion of Law & Judgment.

May 29—Filed notice of appeal by defendant.

July 3—Filed motion to extend time.

July 3—Filed & entered order extending time 90
days to docket appeal.

Sept. 18—Filed designation of record.

Sept. 20—Filed transcript of testimony.

In the United States District Court
for the District of Oregon

United States of America,
District of Oregon—ss.

CERTIFICATE OF CLERK

I, R. DeMott, Clerk of the United States District
Court for the District of Oregon, do hereby certify
that the foregoing documents consisting of Com-

plaint; Answer; Reply; Motion for leave to file supplemental complaint; Order granting leave to file supplemental complaint; Answer to supplemental complaint; Interrogatories to be propounded to plaintiff; Answer to interrogatories; Amended answer; Memorandum of decision; Findings of fact, conclusions of law and judgment; Notice of appeal; Motion for extension of time for filing record on appeal; Order extending time ninety days from date of filing Notice of Appeal; Designation of contents of record on appeal and Transcript of docket entries constitute the record on appeal from a judgment of said court in a cause therein numbered Civil 8189, in which Herbert Brownell, Jr., as Attorney General of the United States of America is the defendant and appellant and Urho Paavo Patakoski is the plaintiff and appellee; that the said record has been prepared by me in accordance with the designation of contents of record on appeal filed by the appellant, and in accordance with the rules of this court.

I further certify that there is enclosed herewith the reporter's transcript of testimony, together with Exhibits numbered from 1 to 6, inclusive.

In Testimony Whereof I have hereunto set my hand and affixed the seal of said court in Portland, in said District, this 20th day of September, 1957.

[Seal]

R. DEMOTT,
Clerk;

By THORA LUND,
Deputy.

[Endorsed]: No. 15719. United States Court of Appeals for the Ninth Circuit. William P. Rogers, as Attorney General of the United States of America, Appellant, vs. Urho Paavo Patokoski, Appellee. Transcript of Record. Appeal from the United States District Court for the District of Oregon.

Filed: September 23, 1957.

/s/ PAUL P. O'BRIEN,
Clerk of the United States Court of Appeals for
the Ninth Circuit.

In the United States Court of Appeals
for the Ninth Circuit

No. 15719

HERBERT BROWNELL, JR., as Attorney Gen-
eral of the United States of America,

Appellant,

vs.

URHO PAAVO PATOKOSKI,

Appellee.

STATEMENT OF POINTS UPON WHICH AP-
PELLANT INTENDS TO RELY ON AP-
PEAL

Appellant respectfully submits the following Statement of Points upon which appellant intends to rely on appeal:

1. The Court erred in determining that the plaintiff is a citizen and national of the United States of America.

2. The Court erred in finding that the plaintiff did not know, until he was so informed by the Immigration and Naturalization Service, that he was a citizen of the United States of America at the time of his birth.

3. The Court erred in concluding that the plaintiff could not expatriate himself or lose or abandon his United States of America citizenship by expatriative acts because he did not know he was a

citizen of the United States of America when such acts were committed.

4. It was error for the Court to adjudge that the plaintiff had not expatriated himself as a citizen of the United States by serving in the Finnish military forces.

5. The Court erred in holding that conscription renders military service involuntary.

6. It was error for the Court to adjudge that the plaintiff had not expatriated himself as a citizen of the United States by voting in a Finnish political election.

7. The Court erred in finding duress to compel plaintiff's voting in Finnish political elections.

Dated at Portland, Oregon, this day of September, 1957.

C. E. LUCKEY,
United States Attorney,
for the District of Oregon;

/s/ VICTOR E. HARR,
Assistant United States Attorney, Attorneys for
Appellant.

Affidavit of service by mail attached.

[Endorsed]: Filed September 27, 1957.

[Title of Court of Appeals and Cause.]

No. 15719

STIPULATION RELATING TO THE DESIGNATION OF THE RECORD TO BE PRINTED

It Is Hereby Stipulated that the entire record, including the transcript of testimony, as transmitted to this Court by the Clerk of the Court below, and including appellant's Statement of Points upon which Appellant intends to rely on Appeal, the Order of this Court staying proceedings, and the Order Substitution Party-Appellant, be printed herein.

It Is Further Stipulated, subject to the approval of the United States Court of Appeals for the Ninth Circuit, that the original exhibits heretofore filed with the Court, need not be printed in the record, but may be referred to by the parties hereto in their briefs and oral arguments and that they be considered by the Court as though they were incorporated in the printed record.

Dated this 18th day of September, 1958.

/s/ VICTOR E. HARR,

Assistant United States Attorney, of Attorneys for Appellant;

/s/ WILLIAM A. MARTIN,

Attorney for Appellee.

[Endorsed]: Filed September 23, 1958.

No. 15723/

IN THE

United States Court of Appeals

FOR THE NINTH CIRCUIT

JOSE FERRONES RIOS,

Appellant,

vs.

UNITED STATES OF AMERICA,

Appellee.

APPELLEE'S BRIEF.

LAUGHLIN E. WATERS,
United States Attorney,

LLOYD F. DUNN,
*Assistant U. S. Attorney,
Chief, Criminal Division,*

LEILA F. BULGRIN,
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*Attorneys for Appellee,
United States of America.*

FILED

NOV 18 1957

PAUL P. UBBEN, CLERK

TOPICAL INDEX

	PAGE
	I.
Jurisdictional statement	1
	II.
Statement of facts.....	1
	III.
Argument	6
	IV.
Conclusion	18

TABLE OF AUTHORITIES CITED

CASES	PAGE
Anderson v. United States, 237 F. 2d 118.....	11
Burdeau v. McDowell, 256 U. S. 465.....	9
Elwood v. Smith, 164 F. 2d 449.....	10
Feldman v. United States, 322 U. S. 487.....	9
Flum v. State, 193 Ind. 585, 141 N. E. 353.....	12
Grice v. United States, 146 F. 2d 849.....	10
Hall v. United States, 48 F. 2d 66.....	11
Jencks v. United States, 353 U. S. 657.....	15, 17
Jerome v. United States, 318 U. S. 101, 63 S. Ct. 483, cert. den. 317 U. S. 606, 63 S. Ct. 62.....	6
Jones v. Hiatt, 50 Fed. Supp. 68.....	6
Jones v. United States, 217 F. 2d 381.....	12
Lotto v. United States, 157 F. 2d 623, cert. den. 330 U. S. 811....	10
Lustig v. United States, 338 U. S. 74.....	11
Marteny v. United States, 218 F. 2d 259.....	6
Parker v. United States, 183 F. 2d 268.....	13
Rea v. United States, 350 U. S. 214.....	13
Serio v. United States, 203 F. 2d 576, cert. den. 346 U. S. 887, 74 S. Ct. 144.....	6, 10
State v. Jarvey, 157 Wash. 236, 228 Pac. 923.....	13
State v. Owens, 302 Mo. 348, 259 S. W. 100.....	12
State v. Robbins, 37 Wash. 2d 431, 224 P. 2d 345.....	13
State of Missouri v. Rogers, 364 Mo. 247.....	13
Symons v. United States, 178 F. 2d 615.....	11, 13
Todd v. State of Indiana, 233 Ind. 594.....	12
United States v. Butler, 156 F. 2d 897.....	10
United States v. Farwell, 76 Fed. Supp. 35.....	6
United States v. O'Brien, 174 F. 2d 341.....	10
United States v. Pugliese, 153 F. 2d 497.....	10

	PAGE
United States v. Stirrsman, 212 F. 2d 900.....	12
Vilarino, Ex parte, 50 F. 2d 582.....	11
Weeks v. United States, 232 U. S. 383.....	9, 12

STATUTES

Health and Safety Code, Sec. 11500.....	4
Missouri Constitution, Art. I, Sec. 15.....	13
Public Law 85-269 (71 Stat. 595).....	16
United States Code, Title 28, Sec. 1291.....	1
United States Code, Title 28, Sec. 3231.....	1

MISCELLANEOUS

United States Code Congressional and Administrative News, No. 14, Sept. 20, 1957, pp. 2949, 3215-3224.....	16
--	----



No. 15723

IN THE

United States Court of Appeals

FOR THE NINTH CIRCUIT

JOSE FERRONES RIOS,

Appellant,

vs.

UNITED STATES OF AMERICA,

Appellee.

APPELLEE'S BRIEF.

I.

Jurisdictional Statement.

The District Court had jurisdiction of the cause under Section 3231 of Title 28, United States Code.

This Court has jurisdiction under Section 1291 of Title 28, United States Code.

II.

Statement of Facts.

On February 18, 1957, Officer D. W. Beckman was assigned to the "Georgia Juvenile" Division of the Los Angeles Police Department, working narcotics [Rep. Tr. 213, 214]. For at least nine months prior to that date, he was customarily assigned to the vicinity of First and Flower Streets in Los Angeles, California. During said

time he made about 22 narcotics arrests in that particular area [Rep. Tr. 43, 44], most of them involving adults [Rep. Tr. 45]. During a four-year period previous to the above date, he had also been assigned to Fifth and Stanford in Los Angeles and had experience with narcotics traffic. In connection with his duties, he had seen heroin contained in a contraceptive and knew that container was a common method of carrying it, used by those who deal in narcotics which come in a powdered form [Rep. Tr. 77, 78]. He also knew that the general reputation of the vicinity of First and Flower Streets for activity in narcotics was bad and second only to Fifth and Stanford [Rep. Tr. 43, 214].

On the evening of February 18, 1957, he was working with Policewoman Grace near First and Flower, both in plain clothes and in a police vehicle which had no official identifying marks on the outside [Rep. Tr. 46, 47]. For approximately five minutes they observed a Yellow Cab parked in a lot next to an apartment house. The defendant came out of the apartment building, walked up and down the sidewalk and looked in several directions. He then went over to the cab and entered [Rep. Tr. 187, 188, 215; Clk. Tr. 23]. As it proceeded on through traffic it was followed by the two officers in their vehicle. A few minutes later, the taxi stopped at a red traffic light. While it was waiting for the signal to change, Officers Beckman and Grace alighted from their car and approached it, the latter walking to the driver's side. As Beckman drew up to the passenger side, he exhibited his badge in his left hand and his flashlight in his right. He also identified himself orally as a police officer to the driver and the defendant, who was sitting close to that side in the rear seat [Clk. Tr. 12; Rep. Tr. 48, 49, 188, 216].

It was about 11:00 p.m. when these things happened, but the area was well lighted with four overhead lights on each corner of the intersection [Rep. Tr. 57]. At about the time the officer was shining his flashlight on his badge, he saw the defendant reach in his right jacket pocket and then drop an object to the floor. Officer Beckman focused his light on it and saw that it appeared to be a transparent rubber contraceptive five to six inches in length and one inch in diameter, filled with light colored powder [Rep. Tr. 42, 49, 55, 56, 57, 62, 217; Clk. Tr. 12].

Immediately thereafter, the defendant pushed the right cab door out as Officer Beckman simultaneously pulled it open. Defendant alighted from the cab and the officer grasped his arm, telling him that he was under arrest "for narcotics." The policeman attempted to retrieve the contraceptive from the floor of the cab while the defendant struggled with him in an attempt to pull away. Finally, Officer Grace came around the cab and Beckman told her to pick up the "stuff" [Rep. Tr. 58, 218, 219; Clk. Tr. 13]. She then retrieved Government's Exhibit 1-A from the floor of the taxi [Rep. Tr. 91, 190, 191], and subsequently gave it to Beckman [Clk. Tr. 13, 14]. The package was later found to contain 2 ounces, 60 grains of heroin.

Shortly after Officer Grace approached the two men, defendant broke away in spite of Beckman's warnings that he was under arrest and that if he did not stop the Officer would have to shoot. There ensued an extensive chase, during which several struggles occurred. The defendant was shot once, finally subdued and then taken to a hospital [Rep. Tr. 218, to 221; Clk. Tr. 13 to 16].

Prior to and during the course of the above events, no federal officers were contacted in regard to them nor did any such officers participate in the occurrences.

The defendant was charged by the People of the State of California with a violation of Section 11500 of the California Health and Safety Code, the possession of narcotics. The case was brought to trial in the Superior Court on the record of the preliminary hearing wherein the two arresting officers had testified. A motion to suppress the evidence, consisting of the heroin, was made on behalf of defendant and granted by the Court. He was then found not guilty. In giving his decision on the motion, the Judge indicated his opinion was based upon the ground the police officer did not arrest appellant on probable cause, and, impliedly, the seizure of the evidence was therefore unlawful [Clk Tr. 38].

Thereafter, Officer Beckman conferred with his superiors in the Police Department with respect to the case and then went to the federal narcotics office about the matter [Clk. Tr. 37].

At the time the case was presented to the federal Grand Jury, neither officer Beckman nor Grace testified [Rep. Tr. 201, 247]. There was no evidence that a reporter transcribed the proceedings at all on that day.

An indictment was returned with the United States of America as plaintiff, charging the defendant

“did * * * receive, conceal, and transport, and facilitate the concealment and transportation of a certain narcotic drug, namely: approximately 2 ounces 60 grains of heroin, * * *” [Clk. Tr. 1-A].

On July 16, 1957, the transcript of the preliminary hearing in the Superior Court and the transcript of the proceeding before that Court wherein Judge Odemar granted the motion to suppress were admitted in evidence by Judge Peirson M. Hall in a hearing before him with respect to the same motion made by appellant in the District Court. It was received only for the purposes of that proceeding [Rep. Tr. 34].

During said hearing, additional evidence with respect to the events of February 18, 1957, was received [Rep. Tr. 35]. It is clear that the primary purpose of the Government in offering this evidence was to show with more particularity what Officer Beckman saw as the "white object" was dropped by defendant onto the taxi cab floor. It had not been brought out in the preliminary proceeding exactly what the object appeared to be to the officer at that time [Clk. Tr. 12, 13].

The additional testimony was that which showed officer Beckman observed the dropping of the object to the floor of the cab and he then shined his flashlight on it. At that time, it appeared to him to be a rubber contraceptive filled with a white powdery substance, which was a common carrier used by heroin peddlers to carry the narcotic [Rep. Tr. 41, 42]. The two men opened the door simultaneously. It was after the defendant dropped what appeared to be a contraceptive filled with light powder in the cab and had alighted from the taxi that the officer grasped him by the wrist, telling him he was under arrest [Rep. Tr. 58].

III.
Argument.

As a basic premise, the federal courts have long held that where the same act or transaction constitutes an offense against both the federal and state laws, an acquittal or conviction in either the federal or state jurisdiction does not bar prosecution therefor in the other jurisdiction.

Jerome v. United States, 318 U. S. 101, 63 S. Ct. 483, cert. den. 317 U. S. 606, 63 S. Ct. 62;

Martency v. United States, 218 F. 2d 259;

Serio v. United States, 203 F. 2d 576, cert. den. 346 U. S. 887, 74 S. Ct. 144;

United States v. Farwell, 76 Fed. Supp. 35;

Jones v. Hiatt, 50 Fed. Supp. 68.

Thus, the United States District Court in this case was not bound by the prior acquittal of appellant in the Los Angeles Superior Court, whether or not it was the result of the granting of a motion to suppress the evidence. Obviously, the federal court was likewise not constrained in any way by Judge Odemar's decision on the motion itself. He was entitled to consider the matter *de novo* in the proceedings before him and to exercise independent judgment in the matter. In other words, the law is clear that there was not a "palpable deprivation of the defendant's right to Due Process in the federal courts, as guaranteed by the Fifth Amendment," by the bringing of the separate federal action based on the transaction involved in the Superior Court case.

United States v. Farwell, *supra*.

Counsel contends that the courts should not encourage unlawful searches and seizures by permitting use in the courts of the fruits of "such unlawful searches and seizures." Thus, his entire argument assumes that the search and seizure in this particular case were unlawful because of Judge Odemar's opinion. However, as Judge Hall stated: ". . . the United States has the right, if it desires, to have its own courts determine as a question of fact whether or not the search and seizure was or was not lawful" [Rep. Tr. 124]. Further, the proceedings before Judge Hall involved the taking of additional evidence which showed beyond any doubt that the search and seizure were lawful. In view of this fact, it is respectfully submitted that it is not necessary to resolve this appeal in the light of the "silver platter" doctrine.

Once it is established that the federal court is entitled to evaluate the evidence independently and that there is sufficient proof in the record to support the District Court's holding that the search and seizure were lawful, then the inquiry in that respect has proceeded to its logical and reasonable conclusion.

The search and seizure were lawful under either one of two grounds. First, there was reasonable ground for the arrest. The general location where the defendant was first seen by the officers had a reputation in the officer's mind of being the second worst place in Los Angeles for narcotics activity. The actions of the defendant in getting into the taxicab were highly suspicious in nature. Officer Beckman also recognized immediately that the object which the defendant dropped to the floor of the cab was a rubber contraceptive filled with a light colored powder, a common receptacle used for carrying heroin by dope peddlers.

As the District Court pointed out, the taxicab waited in what appears to be a fairly disreputable neighborhood for about five minutes. The defendant came out of an apartment house, looked up and down the street and walked up the sidewalk, still looking around; then he went back to the cab and got in. No arrest took place as yet, and nothing was done to deter the defendant's movements. The officers followed the taxicab to an intersection where it stopped of its own accord, waiting for the signal to change. Officer Beckman merely walked up to the passenger side with a flashlight in one hand and exhibited his badge in the other, orally identifying himself as a policeman. Immediately thereafter the defendant reached into his jacket pocket and dropped an object to the floor. The officer shined his light on it and saw that it seemed to be a rubber contraceptive filled with the light powder. As stated above, he knew that this container was a common carrier for heroin used by those engaged in the sale of the drug in powdered form.

It was not until then, after he had observed all of these circumstances, that he endeavored to open the door. The defendant pushed it open at the same time and alighted. It was after the defendant had abandoned the contraceptive and his place in the vehicle that he was placed under arrest.

It was "highly reasonable that any conscientious police officer would be justified in reaching the conclusion that the defendant was then engaged in the commission of a felony, to wit: the transportation of narcotics . . . and he was justified in then placing the defendant under arrest" [Rep. Tr. 126, 127].

Secondly, there was actually no search here at all within the meaning of the Fourth Amendment. The defendant had "severed" himself from the object and abandoned it on the floor of a public vehicle, which he then left himself. The dropping of the object occurred before the arrest was effected, and was therefore not caused by the arrest. In a sense, it was a disclaimer by the defendant at that time of any interest in the package, which was retrieved without a search.

Assuming, *arguendo*, that the heroin had been obtained through illegal search and seizure (which, of course, the Government does not concede), the law clearly holds that it is still admissible in the federal court under certain conditions.

In *Feldman v. United States*, 322 U. S. 487, 490, 492 (1943), it was stated:

"For more than 100 years, . . . one of the settled principles of our Constitution has been that these Amendments protect only against invasion of civil liberties by the Government whose conduct they alone limit. . . .

"And so, while evidence secured through unreasonable search and seizure by federal officials is inadmissible in a federal prosecution . . . incriminating documents so secured by state officials without participation by federal officials but turned over for their use are admissible in a federal prosecution."

See also:

Weeks v. United States, 232 U. S. 383, 398;

Burdeau v. McDowell, 256 U. S. 465 (1920).

This principle has been unanimously followed by the United States Courts of Appeals. In *Serio v. United*

States, 203 F. 2d 577-578, *supra*, the Court of Appeals for the Fifth Circuit held:

“Where, as here, the search was made wholly by state officers acting solely under state law, no federal officers being present, the search was not instigated nor participated in by federal officers, and there was no assistance, cooperation or collaboration by federal officers, the evidence obtained by such search, even though the search was unauthorized, is admissible in a prosecution by the United States based upon the illegal acquisition of the article found by the search. The admission of evidence secured in such circumstances does not vitiate defendant’s rights secured by the Fourth Amendment, as that Amendment operates only against the invasion of civil liberties by the United States.”

The following Circuits also are in accord:

United States v. O'Brien, 174 F. 2d 341 (7 Cir. 1949);

Lotto v. United States, 157 F. 2d 623 (8 Cir. 1946); cert. den. 330 U. S. 811;

United States v. Butler, 156 F. 2d 897 (10 Cir. 1946);

United States v. Pugliese, 153 F. 2d 497 (2 Cir. 1945);

Grice v. United States, 146 F. 2d 849 (4 Cir. 1945).

It is submitted that this Honorable Court of Appeals has also always clearly upheld the general rule. In *Elwood v. Smith*, 164 F. 2d 449, 451 (9 Cir. 1947), it was held:

“Evidence secured by a state or local officer not acting for the federal government by reason of an

illegal search and seizure is admissible in federal courts when properly presented and is not violative of the United States Constitution . . . The Fourth Amendment is not directed towards state officials, but rather its limitations are confined to the federal government and its agency . . . Thus, the question of an infringement of the Fourth Amendment does not arise herein, the search and seizure being made by state or local officers acting independently of the federal government.”

Square holdings to this effect are contained in the following cases:

Symons v. United States, 178 F. 2d 615 (9 Cir. 1949);

Ex parte Vilarino, 50 F. 2d 582 (9 Cir. 1931);

Hall v. United States, 48 F. 2d 66 (9 Cir. 1931).

The test as to whether the federal officials were working in cooperation with state officers has been laid down by the Supreme Court in the case of *Lustig v. United States*, 338 U. S. 74, 78-79:

“. . . a search is a search by a federal officer if he had a hand in it; it is not a search by a federal officer if evidence secured by state authorities is turned over to the federal authorities on a silver platter.”

See also:

Anderson v. United States, 237 F. 2d 118 (9 Cir. 1956).

Appellant contends that the “silver platter” doctrine of non-federal participation does not apply if the evidence was illegally obtained by state officers in a state which

itself excludes illegally obtained evidence, particularly where there has been a previous decision to that effect by the state court. However, it is submitted that the above authorities, as well as those cited below, do not sustain his contention.

At least two Circuits, the Seventh and Eighth, as well as this Court, have affirmed the silver platter doctrine, although the evidentiary rule of the state wherein the search and seizure occurred is one of exclusion of illegally obtained evidence.

The Seventh Circuit case of *United States v. Stirrsman*, 212 F. 2d 900, concerns a silver platter case originating with search and seizure by officers of the State of Indiana. As early as 1923, in *Flum v. State*, 193 Ind. 585 or 141 N. E. 353, in a state case concerning a liquor offense, Indiana adopted the federal rule of *Weeks v. United States*. Indiana has not changed its rule. See *Todd v. State of Indiana*, 233 Ind. 594, 596 (1954). However, in the federal *Stirrsman* case, cited *supra*, the District Court denied the motion to suppress and was affirmed on appeal.

Similarly, in the Eighth Circuit case, *Jones v. United States*, 217 F. 2d 381 (Dec. 15, 1954), the Court thoroughly discusses the recent Supreme Court cases, and following them, reaffirms the doctrine of non-federal participation, as permitting receipt by the federal court of evidence admittedly unlawfully obtained by State officers in the State of Missouri. According to Wigmore, the leading Missouri case on search and seizure is *State v. Owens*, 302 Mo. 348, and 259 S. W. 100. The *Owens* case holds that in Missouri, unlawfully obtained evidence may be suppressed. The Missouri rule is un-

changed. See *State of Missouri v. Rogers*, 364 Mo. 247, 252 (1953), and Const. Mo. Art. I, Sec. 15.

The Ninth Circuit has decided the issue in accord with the Seventh and Eighth Circuits. The State of Washington, which is, of course, within the Ninth Circuit, has the federal rule excluding evidence obtained improperly. See *State v. Jarvey*, 157 Wash. 236, 228 Pac. 923 (1930), and *State v. Robbins*, 37 Wash. 2d 431, 224 P. 2d 345 (1951), for the Washington rule. In 1950, the Ninth Circuit considered a case wherein the Seattle police officers searched the defendant's room without a warrant and, two days later, turned the evidence and the case over to the federal government. The federal officers knew of the search for the first time when the case was turned over, as aforesaid. This Court held in *Parker v. United States*, 183 F. 2d 268 (9 Cir. 1950), that the evidence so obtained was admissible in federal courts because it was clear that there was no complicity by federal officials in the seizure of the evidence. See also *Symons v. United States*, 178 F. 2d 615 (9 Cir. 1949), where the defendant argued that the state officers were "agents" of the federal government when they conducted the search. The Court rejected this contention.

In *Rea v. United States*, 350 U. S. 214 (1956), cited by appellant at page 18 of his brief, the Supreme Court was dealing with an entirely different problem. It ". . . put all the constitutional questions to one side . . . We have then a case that raises not a constitutional question but one concerning our supervisory powers over federal law enforcement agencies."

Thus, the District Court properly denied all of the appellant's motions based upon the above matters.

With respect to appellant's request to examine the transcript of the grand jury, there was no evidence adduced which showed that there had been any transcript made or notes taken by a reporter of the federal grand jury proceedings on the occasion that this matter was presented to them. Further, it was established that neither Officer Beckman nor Policewoman Grace testified at that time. Therefore, appellant did not establish any basis upon which this request could have been properly granted. Certainly, under these circumstances, it was not required in the "interests of justice."

Appellant contends that he also should have been allowed to examine any written reports or records made by federal agents or oral statements by the officers to them. However, again the evidence fails to show that written records were made by federal agents of oral statements made to them by the police officers. Officer Beckman testified that he made only an oral statement to federal agents and showed them a copy of his arrest report [Rep. Tr. 68, 69]. There was no testimony that we can find which indicates his statements were written down at the federal office. Since the evidence shows that a copy of the police report containing all the details was given to the latter office, the strong inference is that his oral statements were not written down at all. Officer Grace testified that she did not make any statement in writing to them other than her collaboration with Officer Beckman in the preparation of the police report. [Rep. Tr. 196.] There is nothing to show that she accompanied him to the federal office. It is submitted that a showing must be made in the record that written reports of the statements of witnesses were made by federal agents before any complaint could be made by appellant that he

was refused access to them. Since there were no statements shown to exist for inspection, appellant's request was again properly denied.

With respect to the written police report prepared by the officers, copies of which were in the U. S. Narcotics Bureau files, it should be noted that the entire report was given to appellant, with the exception of one short paragraph dealing with the statements of another witness to the police officer [Rep. Tr. 98].

In a well considered analysis of the *Jencks* case, 353 U. S. 657 [Clk. Tr. 52-60] Judge Hall, in this case and two others consolidated for opinion, held that the motions in all three cases *misconceive* that Supreme Court decision. He held that it was clear from a careful reading of the opinion that it does not give an "unlimited hunting license to the defendant for the Government's witnesses, or an unlimited right to prospect, at will, * * *". Without repeating all of the details of his holding, with which this Court is undoubtedly familiar, we wish to emphasize that under it the defendant is logically only entitled to the exact words which the witness has used, "That is to say, if he has made a signed written statement, * * * if he has made a statement which was dictated to a stenographer and he admits that it was his statement * * * or if the statement was recorded on any kind of recording apparatus * * *." The Court went on to state that grand jury testimony is included, *if* he is shown to have testified and *if* it has been recorded. (Emphasis supplied.)

Judge Hall also held that the defendant is not entitled to see a report "touching events, activities or persons concerning which the witness has not testified. If there is set forth what some other person has told the witness,

such matter is hearsay and is not admissible in evidence, and the defendant is not entitled to see such portion
* * *.”

The Court then discussed at considerable length the method of determining relevancy, considering that the “Supreme Court purported to disapprove the practice of producing documents for the inspection of the Judge before being shown to the accused.” The gist of his holding in that respect is that: “It is the historic function of the Judge to make decisions as to whether or not a document, or any other evidence, is relevant, or material, or competent.”

“What a dream for criminals it would be,” he said, “*in addition to those protections*, for them to have all the records of law enforcement agencies to paw through in the hope that something might turn up, or to warn their friends, or to influence or frighten witnesses, or to suppress evidence which has been obtained by the Government, in many instances at the risk of an officer’s life.” (Emphasis supplied.)

The Government believes that the comprehensive Senate report on the new Public Law 85-269; 71 Stat. 595 (sometimes referred to as a means of identification as the “Jencks’ law”), will be of great interest to this Court in connection with the points raised on appeal. The text of the law, as well as the report, are contained in the “1957 U. S. Code Congressional and Administrative News”, No. 14, September 20, 1957, at pages 2949 and 3215 to 3224.

It is stated therein that the objective included *interpreting* the opinion handed down by the Supreme Court of the United States on June 3, 1957, in the case of *Clinton E. Jencks, petitioner v. United States of America*.

It was said that the legislation "will also be effective in correcting wide-spread misinterpretations and popular misunderstandings of the opinion in the *Jencks* case, many instances of which have been revealed to the committee since the decision was handed down."

In formulating the legislation along the lines of Judge Hall's decision in this case, the committee emphasized that "The proposed legislation is not designed to nullify, or to curb, or to limit the decision of the Supreme Court insofar as due process is concerned." However, it had realized that "misapplication of the *Jencks* doctrine can mean an irretrievable loss to the Government's case."

After discussing thoroughly the aspects of the problems which are at issue herein, the report indicated that "Although there is language in the *Jencks* opinion which, standing alone, might have led a lower court to a misapprehension of the meaning of the decision, the committee does not believe, after studying the decision very carefully, that a defendant would be entitled under the decision in the *Jencks* case to rove at will through Government files."

In other words, the gist of the report is that the new law is the proper interpretation of the Supreme Court opinion, occasioned by "widespread interpretations and popular misunderstandings" (of which the decision below by Judge Hall was not one). It was definitely not a change intended to "nullify" or "curb" the *Jencks* decision.

It is respectfully submitted that the above report shows a correct interpretation of the case and should be of persuasive interest to this Court in affirming the judgment of the trial court.

Counsel for appellant mentions in his brief at pages 22 and 23 a colloquy between Court and counsel with respect to certain questions allegedly asked for the purpose of impeachment. It is clear that the Court as entitled to comment on the evidence and it is felt that his remarks should be treated as properly made on that basis.

IV.

Conclusion.

It is respectfully submitted that the judgment below should be affirmed.

Respectfully submitted,

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No. 15730

United States
Court of Appeals
for the Ninth Circuit

UNITED STATES OF AMERICA,

Appellant,

vs.

JAMES P. STAPLES, BERNARD D. OSLIN
and RICHARD C. COOPER, Appellees.

Transcript of Record

Appeals from the United States District Court for the
Northern District of California, Southern Division

FILED

JAN 10 1958

PAUL S. GIBSON, CLERK



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INDEX

[Clerk's Note: When deemed likely to be of an important nature, errors or doubtful matters appearing in the original certified record are printed literally in italic; and, likewise, cancelled matter appearing in the original certified record is printed and cancelled herein accordingly. When possible, an omission from the text is indicated by printing in italic the two words between which the omission seems to occur.]

	PAGE
Affidavit of Jerry W. Mitchell in Support of Motion for Examination of Parties Before Trial (20954-5)	31
Affidavit of Jerry W. Mitchell in Support of Motion for Judgment by Default (20955)...	35
Answer of the United States:	
No. 20954	5
No. 20955	25
No. 20956	49
Appeal:	
Certificates of Clerk to Transcripts of Rec- ord on	19, 42, 57
Designations of Record on (DC).....	16, 40, 55
Notice of (20954).....	15
Notice of (20955).....	39
Notice of (20956).....	54
Order of Consolidation on (20954-5).....	11
Order of Consolidation on (20954-5-6).....	12
Statement of Points Appellant Intends to Rely Upon on (USCA).....	164

ii.

Certificate of Clerk to Transcript of Record:

No. 20954	19
No. 20955	42
No. 20956	57

Claim of the United States (20954).....	9
---	---

Designation of Record on Appeal (DC):

No. 20954	16
No. 20955	40
No. 20956	55

Docket Entries:

No. 20954	17
No. 20955	40
No. 20956	56

Minute Order—Sept. 30, 1957 (Nos. 20954-5-6)	.
—Motion to Dismiss Granted, Petitions of Seamen Granted, Charges of Desertion Set Aside, Motion for Stay of Execution Denied	14

Motion for Judgment by Default (20955).....	35
---	----

Motion for Order for Examination of Parties Before Trial (20955).....	30
---	----

Names and Addresses of Proctors.....	1
--------------------------------------	---

Notice of Appeal:

No. 20954	15
No. 20955	39
No. 20956	54

Notice of Deposition of Oslin (20955).....	29
--	----

iii.

Order for Consolidation:

Filed Sept. 13, 1957 (20954-5).....	11
Filed Sept. 27, 1957 (20954-5-6).....	12

Order for Examination of Parties Before
Trial (20954-5)

34

Order for Payment:

No. 20954	13
No. 20955	37
No. 20956	53

Petition of Richard C. Cooper (20956).....

46

Petition of Bernard D. Oslin (20955).....

23

Petition of James P. Staples (20954).....

3

Petition of the United States:

No. 20955	21
No. 20956	45

Statement of Points on Which Appellant In-
tends to Rely on Appeal (USCA).....

164

Transcript of Proceedings and Testimony (Nos.
20954-5-6)

58

Deposition of Morris W. Mote (Nos. 20954-
5-6)

72

—direct

75

—cross

103

—redirect

108

Deposition of E. L. Wheeler (20954).....

115

—direct

117

—redirect

128

Transcript of Proceedings and Testimony (Nos. 20954-5-6)—(Continued) :	
Deposition of E. L. Wheeler (20955).....	144
—direct	144
Deposition of E. L. Wheeler (20956).....	148
—direct	148
Exhibit B for Respondent (For Identification)—Official Log-Book of U.S.N.S. “Escambia” (Excerpts)	159-163
Witnesses :	
Johnson, Frank A.	
—direct	65
Naracci, Joseph	
—direct	135
—cross	140

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United States District Court, Northern District
of California, Southern Division

No. 20954

IN THE MATTER OF THE PETITION OF
JAMES P. STAPLES, SEAMAN, FOR AN
ORDER SETTING ASIDE THE FORFEI-
TURE OF HIS WAGES, CLOTHING AND
EFFECTS, FOR DESERTION

PETITION

The petition of James P. Staples, a seaman, under Admiralty Rule 42, for an order setting aside the forfeiture of his wages, clothing and effects, for desertion, respectfully shows:

1. I am a merchant seaman holding Coast Guard Mariner's Document Z-394273 DI, and I have been going to sea for 14 years;
2. On or about 19 September, 1956, I signed on as a member of the crew of the Steamship USNS Escambia;
3. The ship was operated by Joshua Hendy;
4. My duties on board were Pumpman;
5. On May 5, 1957, at the Port of Sasebo, Japan, I left the ship with permission of the Master for the purpose of shore leave;
6. I did leave my clothing and effects on board;
7. On May 5, 1957, the Master logged me as a deserter;

8. The reasons for my failure to rejoin the ship are as follows:

Myself and two others were returning to the ship in a launch, still five or six miles from the ship the launch broke down and we had to be towed back ashore. In the meantime the ship sailed.

9. My ship was put to \$ None expenses because of my failure to rejoin her.

10. There is now on deposit in the Registry of this Court the sum of \$1641.20, the amount of wages due me at the time I was logged as a deserter.

11. The United States Shipping Commissioner at the Port of San Francisco does have in his custody clothing and effects left by me aboard the said ship.

12. The address where any mail to me concerning this petition should be sent is: Continental Hotel, 125 Ellis, San Francisco.

13. I came back to the United States on the Steamship Golden State Mariner, arriving at the Port of Los Angeles on June 28, 1957.

14. I came: * * * * * (4) As a member of the ship's crew, in the capacity of Steward Utility, being paid \$110 per month, plus overtime and allowances.

Wherefore, I respectfully request the Court to find that the Master erroneously entered me as a deserter, and that an order be made setting aside the forfeiture of my wages, clothing and effects, and directing the Clerk of this Court to pay me the

above-mentioned wages due, and that the United States Shipping Commissioner be directed to deliver to me all of my clothing and effects now in his custody or control.

/s/ JAMES P. STAPLES.

United States of America,
Northern District of California—ss.

James P. Staples, being first duly sworn, deposes and says: That he is the petitioner above named and that he has read the foregoing petition and knows the contents thereof; and that all statements contained therein are true.

/s/ JAMES P. STAPLES.

Subscribed and sworn to before me, this 4th day of September, 1957.

[Seal] /s/ J. P. WELSH,
Deputy Clerk, U. S. District Court, Northern District of California.

[Endorsed]: Filed September 4, 1957.

[Title of District Court and Cause No. 20954.]

ANSWER OF RESPONDENT UNITED
STATES OF AMERICA

Comes now respondent United States of America pursuant to 46 U.S.C. 706 and Admiralty Rule 42 and in answer to the petition of James P. Staples, admits, denies and alleges as follows:

I.

Answering unto Article 1, respondent admits the allegations thereof.

II.

Answering unto Article 2, respondent admits that the petitioner signed on as a member of the crew of the USNS Escambia on or about September 19, 1956.

III.

Answering unto Article 3, respondent alleges in this regard that the USNS Escambia was operated by the United States of America through its operating agent Joshua Hendy Corporation; respondent denies each and every, all and singular, the remaining allegations thereof, not herein otherwise admitted or denied.

IV.

Answering unto Article 4, respondent admits the allegations thereof.

V.

Answering unto Article 5, respondent admits that on May 5, 1957, at the Port of Sasebo, Japan, petitioner left the USNS Escambia; respondent denies that petitioner left the vessel with permission of the Master and alleges in this regard that petitioner was on duty at the time he left the vessel; respondent denies each and every, all and singular, the remaining allegations thereof, not herein otherwise admitted or denied.

VI.

Answering unto Article 6, respondent alleges that

it does not have knowledge or information sufficient to answer the allegations contained therein and upon that ground denies each and every, all and singular, the allegations thereof but alleges in this regard that petitioner did leave some clothing and effects aboard the USNS Escambia.

VII.

Answering unto Article 7, respondent admits the allegations thereof but alleges in this regard that petitioner was logged as a deserter on May 8, 1957.

VIII.

Answering unto Article 8, respondent alleges that it has no knowledge or information sufficient to answer the allegations contained therein and upon that ground denies each and every, all and singular, the allegations thereof.

IX.

Answering unto Article 9, respondent alleges that it does not have knowledge or information sufficient to answer the allegations contained therein and upon that ground denies each and every, all and singular, the allegations thereof, but alleges that the USNS Escambia was put to an expense of at least \$25.00 in this regard.

X.

Answering unto Article 10, respondent admits the allegations thereof.

XI.

Answering unto Article 11, respondent admits the allegations thereof.

XII.

The allegations of Article 12 require no answer.

XIII.

Answering unto Article 13, respondent alleges that it has no knowledge or information sufficient to answer the allegations contained therein and upon that ground denies each and every, all and singular, the allegations thereof.

XIV.

Answering unto Article 14, respondent alleges that it has no knowledge or information sufficient to answer the allegations contained therein and upon that ground denies each and every, all and singular, the allegations thereof.

Wherefore respondent prays that this matter be set down for hearing at such time as will give each party sufficient time and notice to make the necessary preparation, take the necessary depositions, subpoena the necessary witnesses, discover the full facts and present the same to the Court; and that after such sufficient time and notice and after a full hearing, findings of fact pursuant to Admiralty Rule 46 $\frac{1}{2}$ be made; and that the Petition of James P. Staples be dismissed and the above wages forfeited to the United States of America in accordance with law on the grounds that Petitioner deserted the USNS Escambia; and that the Clerk of this Court be directed to remit the said funds on deposit in the Registry to the Treasurer of the United States of America; and that the United States of America may have such other and further

relief as to the Court may seem just and equitable.

LLOYD H. BURKE,

United States Attorney,

/s/ KEITH R. FERGUSON,

Special Assistant to the Attorney
General,

/s/ JERRY W. MITCHELL,

Attorney, Department of Justice,
Proctors for Respondent.

Affidavit of Mailing Attached.

[Endorsed]: Filed September 6, 1957.

[Title of District Court and Cause No. 20954.]

CLAIM OF THE UNITED STATES TO
FUNDS IN THE REGISTRY

To the Honorable the Judges of the United States
District Court for the Northern District of
California, Southern Division, Sitting in Ad-
miralty:

The claim of the United States of America pur-
suant to Admiralty Rule 42 to the sum of \$1641.20,
now on deposit in the Registry, alleges as follows:

I.

That on September 19, 1956, petitioner James P.
Staples signed on the USNS *Escambia* for a for-
eign voyage which began on September 19, 1956 at
Los Angeles, California and ended on August 16,
1957 at San Francisco, California.

II.

That on or about May 5, 1957, in the Port of

Sasebo, Japan James P. Staples left the USNS Escambia and remained away from the vessel and did not join her during the remainder of her voyage, all without permission of the master.

III.

That the master of the USNS Escambia, on May 8, 1957, entered the desertion of James P. Staples in the official log book of the vessel; that pursuant to 46 U.S.C. Section 701, the wages then due to James P. Staples were forfeited for desertion, and that the said wages in the sum of \$1641.20 are now on deposit in the Registry of this Court in accordance with law.

Wherefore, claimant United States of America prays this Honorable Court to decree that the wages of petitioner James P. Staples, now on deposit in the Registry, are forfeited to the United States of America, and that the Clerk of the Court be directed to pay the wages so forfeited into the Treasury of the United States pursuant to law.

LLOYD H. BURKE,

United States Attorney,

/s/ KEITH R. FERGUSON,

Special Assistant to the Attorney
General,

/s/ JERRY W. MITCHELL,

Attorney, Department of Justice,
Proctors for Respondent and Claim-
ant, United States of America.

Affidavit of Mailing Attached.

[Endorsed]: Filed September 6, 1957.

In the United States District Court, Northern
District of California, Southern Division

In Admiralty—No. 20954

In the Matter of the Petition of James P. Staples
for an Order Setting Aside the Forfeiture of
His Wages, Clothing and Effects, for Desertion.

In Admiralty—No. 20955

In the Matter of the Petition of Bernard D. Oslin
for an Order Setting Aside the Forfeiture of
His Wages, Clothing and Effects, for Deser-
tion.

ORDER CONSOLIDATING CAUSES

It now appearing that both the above entitled
causes rest upon the same matter of right or de-
fense as shown by the petitions,

It Is Hereby Ordered that the discovery, pre-
trial and trial of the causes be consolidated.

Dated: September 13, 1957.

/s/ OLIVER J. CARTER,
United States District Judge.

[Endorsed]: Filed September 13, 1957.

In the United States District Court, Northern
District of California, Southern Division

In Admiralty—No. 20954

In the Matter of the Petition of James P. Staples
for an Order Setting Aside the Forfeiture of
His Wages, Clothing and Effects, for Deser-
tion.

Consolidated With

In Admiralty—No. 20955

In the Matter of the Petition of Bernard D. Oslin
for an Order Setting Aside the Forfeiture of
His Wages, Clothing and Effects, for Deser-
tion.

In Admiralty—No. 20956

In the Matter of the Petition of Richard C. Cooper
for an Order Setting Aside the Forfeiture of
His Wages, Clothing and Effects, for Deser-
tion.

* * * * *

ORDER CONSOLIDATING CAUSES

It now appearing that the above entitled causes
rest upon the same matter of right or defense as
shown by the petitions,

It Is Hereby Ordered that the discovery, pre-
trial and trial of the causes be consolidated.

Dated: September 27th, 1957.

/s/ MICHAEL J. ROCHE,
United States District Judge.

[Endorsed]: Filed September 27, 1957.

United States District Court, Northern District
of California, Southern Division

No. 20954

IN THE MATTER OF THE PETITION OF
JAMES P. STAPLES, SEAMAN, FOR AN
ORDER SETTING ASIDE THE FORFEI-
TURE OF HIS WAGES, CLOTHING AND
EFFECTS, FOR DESERTION

ORDER

Upon consideration of the verified petition on file herein, and after hearing and good cause being shown therefor, and it appearing to the Court that the Master erroneously entered petitioner in the log as a deserter; and that in the light of additional evidence adduced at the hearing \$1641.20 of his wages, his clothing and effects should be returned to him; and that none of his wages should be forfeited to the United States, and that the operator of the vessel is entitled to none of petitioner's wages for expenses incurred;

It Is Hereby Ordered that the Clerk of this Court draw a check in favor of James P. Staples in the sum of \$1640.05 and a check in favor of C. W. Calbreath, Clerk, in the sum of \$1.15, Clerk's fees, and

It Is Further Ordered that the United States Shipping Commissioner for the Port of San Francisco deliver to petitioner all his clothing and effects

which may be in the said Shipping Commissioner's custody or control, upon taking receipt therefor.

Dated: September 30, 1957.

/s/ MICHAEL J. ROCHE,

Chief Judge, United States District Court, Northern District of California.

[Endorsed] Filed September 30, 1957.

United States District Court
Northern District of California, Southern Division

MINUTE ORDER

At a Stated Term of the United States District Court for the Northern District of California, Southern Division, held at the Court Room thereof, in the City and County of San Francisco, on Monday, the 30th day of September, in the year of our Lord one thousand nine hundred and fifty-seven.

Present: the Honorable Michael J. Roche, District Judge.

[Title of Causes No. 20954-5-6.]

The parties hereto being present as heretofore, the further hearing of this matter was continued. Joseph Narracci, was sworn and testified on behalf of the Government. Exhibit No. B was marked for identification. The Government read into the record certain portion of the Wheeler deposition, the cross examinations in the depositions were waived. Thereupon the Government rested. The Petitioners' Motion to Dismiss the Government's claim was

Granted, the petitions of the seamen were Granted, and It Is Ordered that the effects and wages be given the seamen, and that the charge of desertion be and is hereby Set Aside. Counsel for the seamen to prepare orders accordingly. Further Ordered that the motion for stay of execution made by the United States, Claimant herein, be Denied.

I Hereby Certify that the foregoing is a full, true, and correct copy of an original order made and entered in the above-entitled.

Attest my hand and seal of said District Court, this.....day of....., A. D., 195...

[Seal] C. W. CALBREATH,
Clerk.

[Title of District Court and Cause No. 20954.]

NOTICE OF APPEAL

To: The Clerk of the Above Entitled Court.

To: James P. Staples.

Please Take Notice that the United States of America, petitioner and claimant in the above entitled action, does hereby appeal to the United States Court of Appeals for the Ninth Circuit from the Order of this Court made on September 30, 1957 dismissing the claim of the United States and from the order and decree of this Court made, entered and filed September 30, 1957 ordering that funds in the Registry be paid over to petitioner

James P. Staples and from each and every part of the said orders and decree.

LLOYD H. BURKE,
 United States Attorney,
 /s/ KEITH R. FERGUSON,
 Special Assistant to the Attorney
 General,
 /s/ JERRY W. MITCHELL,
 Attorney, Department of Justice,
 Proctors for Respondent United
 States of America.

Certificate of Mailing Attached.

[Endorsed]: Filed October 1, 1957.

[Title of District Court and Cause No. 20954.]

DESIGNATION OF CONTENTS OF
 RECORD ON APPEAL

Appellant hereby designates for inclusion in the record on appeal herein each and every part of the record herein, including the docket entries.

LLOYD H. BURKE,
 United States Attorney,
 /s/ KEITH R. FERGUSON,
 Special Assistant to the Attorney
 General,
 /s/ JERRY W. MITCHELL,
 Attorney, Department of Justice,
 Proctors for Respondent United
 States of America.

Certificate of Mailing Attached.

[Endorsed]: Filed October 1, 1957.

[Title of District Court and Cause No. 20954.]

DOCKET ENTRIES

1957

Aug. 20—U. S. Shipping Commr. Received 1641.20.

Sept. 4—Filed seaman's petition.

6—Filed claim of U. S. to funds.

—Filed answer of U. S.

—Filed notice of taking deposition.

10—Ord. con. Sept. 27 for hearing seaman's
petition. (Carter)

11—Filed notice of taking deposition.

—Filed mo. to consolidate with 20955.

12—Filed notice of taking deposition.

13—Filed order consolidating with 20955.

17—Ord. time shortened for motion for order
of examination.

—Filed affid. Jerry W. Mitchell.

—Filed notice of taking depos.

—Filed motion for order for examination.

19—Filed order for examination.

—Filed substitution of attys. Charles M.
Haid for Herbert Resner.

25—Filed depos. of Morris W. Mote.

—Filed depos. of Edward L. Wheeler.

26—Filed depos. of Jas. P. Staples.

27—Ord. assigned to Judge Roche for hear-
ing. (Carter)

—Hearing held, evidence introduced.
(Roche)

—Con. Sept. 30 for further hearing.

1957

Sept. 30—Hearing resumed, evid. introduced.

(Roche)

—Ord. petr.'s mo. to dis. the Gov't's claim granted, petitions of the seaman for wages granted, charge of desertion set aside. Mo. of U. S. for stay of execution denied.

—Filed and entered order granting seaman's petn.

—Filed Notice of Appeal (U. S.).

—Filed order staying execution. (Judge Healy)

Oct. 1—Filed notice of appeal (U. S.).

—Filed designation of contents of record on appeal.

[Title of District Court and Cause No. 20954.]

CERTIFICATE OF CLERK

I, C. W. Calbreath, Clerk of the United States District Court for the Northern District of California, do hereby certify that the foregoing and accompanying documents and exhibits, listed below, are the originals filed in this Court in the above-entitled case and that they constitute the record on appeal herein.

Account of Wages and Effects of Deserting Seamen.

Petition of James P. Staples for an Order Setting Aside the forfeiture of his wages, clothing and effects, etc.

Notice of taking deposition.

Answer of Respondent United States of America.
Claim of the United States to Funds in the Registry.

Notice of taking deposition.

Motion for Order of Consolidation.

Notice of taking deposition.

Order Consolidating causes.

Motion for Order for examination of Parties before trial.

Notice of taking deposition.

Order shortening time for hearing on Motion for an Order for examination of parties before trial.

Substitution of Attorneys.

Order for examination of Parties before trial.

Motion for Order of Consolidation.

Order Setting Aside the Forfeiture of Wages,
Clothing, etc.

Order Docketing cause and staying execution of
Final Order of District Court.

Notice of Appeal.

Notice of Appeal.

Designation of Contents of Record on Appeal.

Docket Entries.

Minute Order.

Deposition of James P. Staples.

Deposition of Edward B. Wheeler (Case No.
20954, 20955 and 20956).

Deposition of Morris W. Mote.

Deposition of Richard C. Cooper.

Respondent's exhibit A.

Respondent's exhibit B.

In Witness Whereof, I have hereunto set my
hand and affixed the seal of said District Court,
this 2nd day of October, 1957.

[Seal] C. W. CALBREATH,
 Clerk.

/s/ By J. P. WELSH,
 Deputy Clerk.

In the United States District Court, Northern
District of California, Southern Division

In Admiralty No. 20955

IN THE MATTER OF THE WAGES OF BER-
NARD D. OSLIN

PETITION OF THE UNITED STATES

To the Honorable the Judges of the United States
District Court for the Northern District of
California, Southern Division, Sitting in Ad-
miralty:

The petition of the United States of America
pursuant to Admiralty Rule 42 for the sum of
\$1939.16 now on deposit in the Registry alleges as
follows:

I.

That on September 19, 1956, petitioner Bernard
D. Oslin signed on the USNS Escambia for a for-
eign voyage which began on September 19, 1956 at
Los Angeles, California and ended on August 16,
1957 at San Francisco, California.

II.

That on or about May 7, 1957, in the Port of
Sasebo, Japan, Bernard D. Oslin left the USNS
Escambia and remained away from the vessel and
did not join her during the remainder of her voy-
age, all without permission of the master.

III.

That the master of the USNS Escambia, on May

8, 1957, entered the desertion of Bernard D. Oslin in the official log book of the vessel; that pursuant to 46 U.S.C. Section 701, the wages then due to Bernard D. Oslin were forfeited for desertion, and that the said wages in the sum of \$1939.16 are now on deposit in the Registry of this Court in accordance with law.

Wherefore, petitioner United States of America prays this Honorable Court to decree that the wages of Bernard D. Oslin now on deposit in the Registry, are forfeited to the United States of America, and that the Clerk of this Court be directed to pay the wages so forfeited into the Treasury of the United States pursuant to law.

LLOYD H. BURKE,

United States Attorney,

/s/ KEITH R. FERGUSON,

Special Assistant to Attorney
General,

/s/ JERRY W. MITCHELL,

Attorney, Department of Justice,

Proctors for Petitioner, United
States of America.

Duly Verified.

[Endorsed]: Filed September 4, 1957.

[Title of District Court and Cause No. 20955.]

PETITION

The petition of Bernard D. Oslin, a seaman, under Admiralty Rule 42, for an order setting aside the forfeiture of his wages, clothing and effects, for desertion, respectfully shows:

1. I am a merchant seaman holding Coast Guard Mariner's Document Z-503798, and I have been going to sea for 10 years;

2. On or about Sept. 19, 1956, I signed on as a member of the crew of the Steamship Escambia;

3. The ship was operated by Joshua Hendy Corp.;

4. My duties on board were Deck Maintenance;

5. On May 8, 1957, at the Port of Sasebo, Japan, I left the ship with permission of the Chief Officer Wheeler for the purpose of shore leave;

6. I did leave my clothing and effects on board;

7. On May 8, 1957, the Master logged me as a deserter;

8. The reasons for my failure to rejoin the ship are as follows: Launch returning me to ship broke down. Towed back to shore. By the time I got another launch the ship had sailed.

9. My ship was put to \$None expenses because of my failure to rejoin her.

10. There is now on deposit in the Registry of this Court the sum of \$1939.16, the amount of wages due me at the time I was logged as a deserter.

11. The United States Shipping Commissioner at the Port of San Francisco does have in his cus-

tody clothing and effects left by me aboard the said ship.

12. The address where any mail to me concerning this petition should be sent is: c/o H. Resner, 240 Stockton St., San Francisco.

13. I came back to the United States on the Steamship USNS Mission Loreto, arriving at the Port of New York on August 25, 1957.

14. I came: (1) With my passage provided under Consular requisition,

(2) With my passage paid by the American Consul of the port ofin the sum of \$.....

(3) As a work-a-way.....

(4) As a member of the ship's crew, in the capacity of A.B., being paid \$358 per month, plus overtime and allowances.

Wherefore, I respectfully request the Court to find that the Master erroneously entered me as a deserter, and that an order be made setting aside the forfeiture of my wages, clothing and effects, and directing the Clerk of this Court to pay me the above-mentioned wages due, and that the United States Shipping Commissioner be directed to deliver to me all of my clothing and effects now in his custody or control.

/s/ BERNARD D. OSLIN.

United States of America,
Northern District of California—ss.

Bernard D. Oslin, being first duly sworn, deposes and says: That he is the petitioner above named and that he has read the foregoing petition and

knows the contents thereof; and that all statements contained therein are true.

/s/ BERNARD D. OSLIN.

Subscribed and sworn to before me, this 10th day of September, 1957.

[Seal] /s/ J. P. WELSH,
Notary Public.

Acknowledgment of Service Attached.

[Endorsed]: Filed September 10, 1957.

[Title of District Court and Cause No. 20955.]

ANSWER OF RESPONDENT UNITED
STATES OF AMERICA

Comes now respondent United States of America pursuant to 46 U.S.C. 706 and Admiralty Rule 42 and in answer to the petition of Bernard D. Oslin, admits, denies and alleges as follows:

I.

Answering unto Article I, respondent admits the allegations thereof.

II.

Answering unto Article II, respondent admits that the petitioner signed on as a member of the crew of the USNS Escambia on or about September 19, 1956.

III.

Answering unto Article III, respondent alleges in this regard that the USNS Escambia was operated by the United States of America through its

operating agent Joshua Hendy Corporation; respondent denies each and every, all and singular, the remaining allegations thereof, not herein otherwise admitted or denied.

IV.

Answering unto Article IV, respondent admits the allegations thereof.

V.

Answering unto Article V, respondent alleges in this regard that petitioner left the USNS Escambia on May 7, 1957 at the Port of Sasebo, Japan; respondent alleges that it does not have knowledge or information sufficient to answer the allegations contained therein and upon that ground denies each and every, all and singular, the remaining allegations thereof, not herein otherwise admitted or denied.

VI.

Answering unto Article VI, respondent alleges that it does not have knowledge or information sufficient to answer the allegations contained therein and upon that ground denies each and every, all and singular, the allegations thereof but alleges in this regard that petitioner did leave some clothing and effects aboard the USNS Escambia.

VII.

Answering unto Article VII, respondent admits the allegations thereof.

VIII.

Answering unto Article VIII, respondent alleges

that it has no knowledge or information sufficient to answer the allegations contained therein and upon that ground denies each and every, all and singular, the allegations thereof.

IX.

Answering unto Article IX, respondent alleges that it does not have knowledge or information sufficient to answer the allegations contained therein and upon that ground denies each and every, all and singular, the allegations thereof, but alleges that the USNS Escambia was put to an expense of at least \$25.00 in this regard.

X.

Answering unto Article X, respondent admits the allegations thereof.

XI.

Answering unto Article XI, respondent admits the allegations thereof.

XII.

The allegations of Article XII require no answer.

XIII.

Answering unto Article XIII, respondent alleges that it has no knowledge or information sufficient to answer the allegations contained therein and upon that ground denies each and every, all and singular, the allegations thereof.

XIV.

Answering unto Article XIV, respondent alleges that it has no knowledge or information sufficient to answer the allegations contained therein and

upon that ground denies each and every, all and singular, the allegations thereof.

Wherefore respondent prays that this matter be set down for hearing at such time as will give each party sufficient time and notice to make the necessary preparation, take the necessary depositions, subpoena the necessary witnesses, discover the full facts and present the same to the Court; and that after such sufficient time and notice and after a full hearing, findings of fact pursuant to Admiralty Rule 46½ be made; and that the Petition of Bernard D. Oslin be dismissed and the above wages forfeited to the United States of America in accordance with law on the grounds that Petitioner deserted the USNS Escambia; and that the Clerk of this Court be directed to remit the said funds on deposit in the Registry to the Treasurer of the United States of America; and that the United States of America may have such other and further relief as to the Court may seem just and equitable.

LLOYD H. BURKE,

United States Attorney,

/s/ KEITH R. FERGUSON,

Special Assistant to the Attorney
General,

/s/ JERRY W. MITCHELL,

Attorney, Department of Justice,
Proctors for Respondent,

United States of America.

Duly Verified.

Affidavit of Mailing Attached.

[Endorsed]: Filed September 11, 1957.

[Title of District Court and Cause No. 20955.]

NOTICE OF TAKING DEPOSITION

To Bernard D. Oslin, Petitioner and Herbert Resner, Esq., his proctor:

You and Each of You Will Please Take Notice and you are hereby notified that the deposition of Bernard D. Oslin, pursuant to Admiralty Rule 13 of the District Court for the Northern District of California, will be taken on Monday, September 16, 1957 at the hour of 10:30 a.m. and from day to day thereafter until the examination is completed in the West Coast Office of the Admiralty and Shipping Section, Department of Justice, Room 447-A United States Post Office Building, 7th and Mission Streets, San Francisco, California, before a notary public or other officer authorized to administer oaths.

Dated: September 11, 1957.

LLOYD H. BURKE,

United States Attorney,

/s/ KEITH R. FERGUSON,

Special Assistant to the Attorney
General,

/s/ JERRY W. MITCHELL,

Attorney, Department of Justice,
Proctors for Respondent
United States of America.

Certificate of Mailing Attached.

[Endorsed]: Filed September 11, 1957.

[Title of District Court and Cause No. 20955.]

MOTION FOR ORDER FOR EXAMINATION
OF PARTIES BEFORE TRIAL

The Respondent, United States of America, by its proctors herein, moves the Court to enter an order instructing Bernard D. Oslin to be and appear at Room 447-A, United States Post Office Building, 7th and Mission Streets, San Francisco, California at the hour of 10:00 A.M., Friday, September 20, 1957 for the purpose of being examined before trial pursuant to Admiralty Rule 13 of this Court.

LLOYD H. BURKE,

United States Attorney,

/s/ KEITH R. FERGUSON,

Special Assistant to the Attorney
General,

/s/ JERRY W. MITCHELL,

Attorney, Department of Justice,
Proctors for Respondent.

* * * * *

Certificate of Mailing Attached.

[Endorsed]: Filed September 17, 1957.

In the United States District Court, Northern
District of California, Southern Division

In Admiralty—No. 20954

In the Matter of the Petition of James P. Staples
for an Order Setting Aside the Forfeiture of
His Wages, Clothing and Effects, for Deser-
tion

In Admiralty—No. 20955

In the Matter of the Petition of Bernard D. Oslin
for an Order Setting Aside the Forfeiture of
His Wages, Clothing and Effects, for Deser-
tion

AFFIDAVIT

Jerry W. Mitchell, being duly sworn, on oath,
deposes and says:

That he is an Attorney in the Department of
Justice and is familiar with the facts and proceed-
ings had herein and has handled both of these
claims since the petitions were filed.

A petition for an order setting aside the forfei-
ture of his wages, clothing and effects for deser-
tion was filed by James P. Staples on September 4, 1957
and by Bernard D. Oslin on September 10, 1957.
Prior to the filing of Bernard D. Oslin's petition,
the United States filed a Petition for the wages of
Oslin on deposit in the Registry of this Court on
September 4, 1957.

Subsequent pleadings were filed and the two
causes set for trial on September 27, 1957. On Sep-
tember 11, 1957, a Notice of Taking Deposition of

petitioners James P. Staples and Bernard D. Oslin was served upon their proctor Herbert Resner, Esq. This notice set the time of taking the depositions for 10:00 A.M. in the Staples case and 10:30 A.M. in the Oslin case on Monday, September 16, 1957. A letter (a copy of which is attached to this affidavit) requesting Mr. Resner to produce each of his clients at the appointed hours accompanied the notices when mailed.

At 10:00 A.M. on September 16, 1957, Mr. Resner and his clients failed to appear at the appointed place. A telephone call was then made to him inquiring of his intentions regarding the depositions. His immediate answer was that he thought the depositions were set for tomorrow (Tuesday) morning. While on the telephone he read his copies of the notice and agreed they had been for Monday. He said he had received the notice Friday morning but had not looked at them well enough to realize the date. At that time I suggested setting the depositions for Tuesday morning, September 17, 1957 at the same times. He refused claiming inability to contact his clients except by mail. He further stated they were scheduled to see him on Wednesday afternoon. At this time he suggested the taking of the depositions be set for Friday afternoon, September 20, 1957. When asked if he would guarantee production of his clients, Friday afternoon, September 20, 1957, he said he would not. He was then asked the addresses of his clients and gave Oslin's but refused to give that of Staples. He then suggested the United States should attempt to obtain the

presence of the parties for deposition purposes as he didn't like the attitude of the United States.

The discovery depositions of the parties in these causes are essential to the proper preparation of the case for the United States and for it to know what it must meet on trial. The United States cannot safely proceed to trial without discovery in this matter.

Wherefore it is respectfully requested that the relief set forth in the notice of motion be granted.

/s/ JERRY W. MITCHELL,

Attorney, Department of Justice.

Subscribed and sworn to before me this 17th day of September 1957.

[Seal] /s/ J. P. WELSH,

Clerk, United States District Court, Northern District of California.

KRF:JWM September 11, 1957 ol

Herbert Resner, Esq.

240 Stockton Street

San Francisco, California

Re: USNS Escambia. Wages of Alleged Deserting Seaman James P. Staples—May 5, 1957. N. D. California—Admiralty No. 20954.

USNS Escambia. Wages of Alleged Deserting Seaman Bernard D. Oslin—May 7, 1957. N. D. California—Admiralty No. 20955.

Dear Sir:

Enclosed are copies of Notice of Taking Deposition in each of the above causes.

We request that you produce each of your clients in the above causes at the appointed hours and we expect that you will do so.

Very truly yours,

Keith R. Ferguson,
Attorney in Charge.

cc:

Chief, Adm. & Ship. Sec. Wash. D. C.

[Endorsed]: Filed September 17, 1957.

[Title of District Court and Causes Nos. 20954-5.]

ORDER FOR EXAMINATION OF PARTIES
BEFORE TRIAL

It Is Hereby Ordered that Respondent United States of America motion for Order for Examination of Parties Before Trial be, and it is granted, that James P. Staples and Bernard D. Oslin be and appear at Room 447-A Post Office Building, 7th and Mission Streets, San Francisco, California on Friday, September 20, 1957 at 10:00 A.M. and at that time testify in answer to questions propounded by counsel before a notary public or other officer authorized to administer oaths.

Dated: September 19, 1957.

/s/ OLIVER J. CARTER,
United States District Judge.

[Endorsed]: Filed September 19, 1957.

[Title of District Court and Cause No. 20955.]

MOTION FOR JUDGMENT BY DEFAULT OR
OTHER APPROPRIATE RELIEF

The Respondent United States of America, by its proctors herein, moves the Court to enter a judgment by default against petitioner, Bernard D. Oslin, or dismiss the Petition of Bernard D. Oslin, with prejudice, or strike the Petition of Bernard D. Oslin, for cause as shown by the record and the attached affidavit and pursuant to Rule 32 e(d) of The Supreme Court Admiralty Rules.

LLOYD H. BURKE,

United States Attorney,

/s/ KEITH R. FERGUSON,

Special Assistant to the Attorney
General,

/s/ JERRY W. MITCHELL,

Attorney, Department of Justice,

Proctors for Petitioner and Respondent United
States of America.

* * * * *

Certificate of Mailing Attached.

[Endorsed]: Filed September 24, 1957.

[Title of District Court and Cause No. 20955.]

AFFIDAVIT

Jerry W. Mitchell, being duly sworn, on oath, deposes and says:

That he is an Attorney in the Department of Jus-

tice and is familiar with the facts and proceedings had herein and has handled this claim since the petition was filed.

Pursuant to a Motion by the United States of America for an Order for Examination of Parties Before Trial and an Affidavit attached thereto and after a hearing on said motion this Court granted the Order on September 19, 1957. Herbert Resner, Esq. proctor for Petitioner, was present in Court at the hearing on the Order and did personally agree to the form of the Order.

The order, as signed by the Court, was for the appearance of Bernard D. Oslin in Room 447-A Post Office Building, 7th and Mission Streets, San Francisco, California on Friday, September 20, 1957 at 10:00 A.M.

At approximately 9:50 A.M. on September 20, 1957, Mr. Resner called and stated that he had been unable to reach Bernard D. Oslin and therefore would not produce him for examination on that date. At this time Mr. Resner suggested that he would bring Oslin in Monday afternoon, September 23, 1957 for the deposition. I advised Mr. Resner that I would be available for taking the deposition Monday afternoon but that the United States of America did not and would not waive the Court Order which we had obtained. Mr. Resner stated he did not understand and I again stated my availability for taking the deposition on Monday and reiterated that we were not waiving the Court Order.

On Monday, September 23, 1957, Mr. Resner and Mr. Oslin failed to appear for the deposition. No

communication was had with Mr. Resner on that date.

The discovery deposition of Oslin is essential to the proper preparation of the case for the United States of America and for it to know what it must meet on trial. The United States of America cannot safely proceed to trial without discovery in this matter.

Wherefore it is respectfully requested that the relief set forth in the notice of motion be granted.

/s/ JERRY W. MITCHELL,

Attorney, Department of Justice.

Subscribed and sworn to before me this 24th day of September, 1957.

[Seal] /s/ J. P. WELSH,

Deputy Clerk, U. S. District Court, Northern District of California.

[Endorsed]: Filed September 24, 1957.

United States District Court, Northern District
of California, Southern Division

No. 20955

IN THE MATTER OF THE PETITION OF
BERNARD D. OSLIN, SEAMAN, FOR AN
ORDER SETTING ASIDE THE FORFEI-
TURE OF HIS WAGES, CLOTHING AND
EFFECTS, FOR DESERTION

ORDER

Upon consideration of the verified petition on file

herein, and after hearing and good cause being shown therefor, and it appearing to the Court that the Master erroneously entered petitioner in the log as a deserter; and that in the light of additional evidence adduced at the hearing \$1939.16 of his wages, clothing and effects should be returned to him; and that none of his wages should be forfeited to the United States, and that the operator of the vessel is entitled to none of petitioner's wages for expenses incurred;

It Is Hereby Ordered that the Clerk of this Court draw a check in favor of Bernard D. Oslin in the sum of \$1935.01, and a check in favor of C. W. Calbreath, Clerk, in the sum of \$1.15, Clerk's fees, and

It Is Further Ordered that the United States Shipping Commissioner for the Port of San Francisco deliver to petitioner all his clothing and effects which may be in the said Shipping Commissioner's custody or control, upon taking receipt therefor.

Dated: September 30, 1957.

/s/ MICHAEL J. ROCHE,

Chief Judge, United States District Court, Northern District of California.

[Endorsed]: Filed September 30, 1957.

[Title of District Court and Cause No. 20955.]

NOTICE OF APPEAL

To: The Clerk of the Above Entitled Court. To:
Bernard D. Oslin:

Please Take Notice that the United States of America, petitioner and claimant in the above entitled action, does hereby appeal to the United States Court of Appeals for the Ninth Circuit from the Order of this Court made on September 30, 1957 dismissing the petition of the United States and from the order and decree of this Court made, entered and filed September 30, 1957 ordering that funds in the Registry be paid over to petitioner Bernard D. Oslin and from each and every part of the said orders and decree.

LLOYD H. BURKE,
United States Attorney,

/s/ KEITH R. FERGUSON,
Special Assistant to the Attorney
General,

/s/ JERRY W. MITCHELL,
Attorney, Department of Justice,
Proctors for Respondent
United States of America.

Certificate of Mailing Attached.

[Endorsed]: Filed October 1, 1957.

[Title of District Court and Cause No. 20955.]

DESIGNATION OF CONTENTS OF RECORD
ON APPEAL

Appellant hereby designates for inclusion in the record on appeal herein each and every part of the record herein, including the docket entries.

LLOYD H. BURKE,
United States Attorney,

/s/ KEITH R. FERGUSON,
Special Assistant to the Attorney
General,

/s/ JERRY W. MITCHELL,
Attorney, Department of Justice,
Proctors for Respondent
United States of America.

Certificate of Mailing Attached.

[Endorsed]: Filed October 1, 1957.

[Title of District Court and Cause No. 20955.]

DOCKET ENTRIES

1957

Aug. 20—U.S. Shipping Commr. Received \$1939.16.

Sep. 4—Filed Petn. of U. S. for wages.

5—Ord. process issue. (Carter)

—Filed order to issue Citation.

10—Filed Seaman's petition.

11—Filed citation executed.

—Filed motion for consolidation with 20954.

1957

- Sept 11—Filed notice of taking deposition.
—Filed answer of U. S.
- 12—Filed notice of taking deposition.
- 13—Ord. consolidated with 20954 con. Sept. 27
for hearing seaman's petition.
- 17—Filed motion for order for examination.
—Filed notice of taking deposition.
- 24—Filed depos. Edward L. Wheeler.
—Filed log book.
—Filed affid. Jerry W. Mitchell.
—Filed U. S. mo. for Judgt. of default.
- 26—Filed depos. of Rich. C. Cooper.
- 27—Ord. assigned to Judge Roche for hearing.
(Carter)
—Hearing held, evidence introduced.
(Roche)
—Con. Sept. 30 for further hearing.
- 30—Hearing resumed, evid, introduced.
(Roche)
—Ord. Petrs. mo. to dis. the Gov'ts. claim
granted, petitions of the seaman for
wages granted, charge of desertion set
aside, Mo. of U. S. for stay of execution
denied.
—Filed and entered order granting sea-
man's petition.
—Filed Notice of appeal (U. S.).
—Filed order staying execution. (Judge
Healy)
- Oct. 1—Filed notice of appeal. (U. S.)
—Filed designation of contents of record
on appeal.

[Title of District Court and Cause No. 20955.]

CERTIFICATE OF CLERK

I, C. W. Calbreath, Clerk of the United States District Court for the Northern District of California, do hereby certify that the foregoing and accompanying documents and exhibits, listed below, are the originals filed in this Court in the above-entitled case and that they constitute the record on appeal herein.

Account of Wages and Effects of Deserting Seamen.

Petition of the United States.

Order for Issuance of Citation.

Petition for an Order Setting Aside the Forfeiture of his wages, clothing, and effects, for desertion.

Citation in Admiralty with executed return thereon.

Motion for Order of Consolidation.

Notice of Taking Deposition.

Answer of Respondent United States of America.

Notice of Taking Deposition.

Affidavit of Jerry W. Mitchell.

Motion for Order for Examination of Parties before trial.

Notice of Taking Deposition.

Motion for Judgment by Default or other appropriate relief.

Affidavit of Jerry W. Mitchell.

Order Setting Aside the Forfeiture of Wages, Clothing, and Effects, for desertion.

Notice of Appeal.

Notice of Appeal.

Designation of Contents of Record on Appeal.

Docket Entries.

Minute Order.

In Witness Whereof, I have hereunto set my hand and affixed the seal of said District Court, this 2nd day of October, 1957.

[Seal]: C. W. CALBREATH,
 Clerk,

/s/ By J. P. WELSH,
 Deputy Clerk.

In the United States District Court, Northern
District of California, Southern Division

In Admiralty—No. 20956

IN THE MATTER OF THE WAGES OF RICH-
ARD C. COOPER

PETITION OF THE UNITED STATES

To the Honorable the Judges of the United States
District Court for the Northern District of
California, Southern Division, Sitting in Ad-
miralty:

The petition of the United States of America
pursuant to Admiralty Rule 42 for the sum of
\$1800.57 now on deposit in the Registry alleges as
follows:

I.

That on September 19, 1956, petitioner Richard
C. Cooper signed on the USNS Escambia for a for-
eign voyage which began on September 19, 1956 at
Los Angeles, California and ended on August 16,
1957 at San Francisco, California.

II.

That on or about May 7, 1957, in the Port of
Sasebo, Japan, Richard C. Cooper left the USNS
Escambia and remained away from the vessel and
did not join her during the remainder of her voy-
age, all without the permission of the master.

III.

That the master of the USNS Escambia, on May

8, 1957, entered the desertion of Richard C. Cooper in the official log book of the vessel; that pursuant to 46 U.S.C. Section 701, the wages then due to Richard C. Cooper were forfeited for desertion, and that the said wages in the sum of \$1800.57 are now on deposit in the Registry of this Court in accordance with law.

Wherefore, petitioner United States of America prays this Honorable Court to decree that the wages of Richard C. Cooper now on deposit in the Registry, are forfeited to the United States of America, and that the Clerk of this Court be directed to pay the wages so forfeited into the Treasury of the United States pursuant to law.

LLOYD H. BURKE,

United States Attorney,

/s/ KEITH R. FERGUSON,

Special Assistant to Attorney
General,

/s/ JERRY W. MITCHELL,

Attorney, Department of Justice,

Proctors for Petitioner,

United States of America.

Duly Verified.

[Endorsed]: Filed September 4, 1957.

[Title of District Court and Cause No. 20956.]

PETITION

The petition of Richard C. Cooper, a seaman, under Admiralty Rule 42, for an order setting aside

the forfeiture of his wages, clothing and effects, for desertion, respectfully shows:

1. I am a merchant seaman holding Coast Guard Mariner's Document Z-5229D-1, and I have been going to sea for 16 years;

2. On or about September 19, 1956, I signed on as a member of the crew of the Steamship USNS Esecambia;

3. The ship was operated by Joshua Hendy;

4. My duties on board were A.B.

5. On May 7, 1957, at the Port of Sasebo, Japan, I left the ship with permission of the Master for the purpose of shore leave;

6. I did leave my clothing and effects on board;

7. On May 8, 1957, the Master logged me as a deserter;

8. The reasons for my failure to rejoin the ship are as follows: On May 8, 1957, with two other seamen also on shore leave, we hired a launch to return us to the vessel. While en route the launch broke down and had to be towed back to the pier where we had engaged the launch. Before we could secure other transportation our vessel sailed.

9. My ship was put to \$0. expenses because of my failure to rejoin her.

10. There is now on deposit in the Registry of this Court the sum of \$1800.57, the amount of wages due me at the time I was logged as a deserter.

11. The United States Shipping Commissioner at the Port of San Francisco does have in his custody clothing and effects left by me aboard the said ship.

12. The address where any mail to me concerning this petition should be sent is: c/o Roos, Jennings & Haid, 1100 Mills Tower, San Francisco, California.

13. I came back to the United States on the Steamship Mongolian Mariner, arriving at the Port of San Francisco on June 30, 1957.

14. I came: (1) With my passage provided under Consular requisition,

(2) With my passage paid by the American Consul of the port of.....in the sum of \$.....

(3) As a work-a-way.....

(4) As a member of the ship's crew, in the capacity of A.B., being paid \$453.00 per month, plus overtime and allowances.

Wherefore, I respectfully request the Court to find that the Master erroneously entered me as a deserter, and that an order be made setting aside the forfeiture of my wages, clothing and effects, and directing the Clerk of this Court to pay me the above-mentioned wages due, and that the United States Shipping Commissioner be directed to deliver to me all of my clothing and effects now in his custody or control.

/s/ RICHARD C. COOPER.

United States of America,
Northern District of California—ss.

Richard C. Cooper, being first duly sworn, deposes and says: That he is the petitioner above named and that he has read the foregoing petition

and knows the contents thereof; and that all statements contained therein are true.

/s/ RICHARD C. COOPER.

Subscribed and sworn to before me, this 17th day of September, 1957.

[Seal] /s/ MABEL M. HULL,

Notary Public in and for the City and County of San Francisco, State of California. My Commission Expires July 23, 1960.

Acknowledgment of Service Attached.

[Endorsed]: Filed September 19, 1957.

[Title of District Court and Cause No. 20956.]

ANSWER OF RESPONDENT UNITED
STATES OF AMERICA

Comes now respondent United States of America pursuant to 46 U.S.C. 706 and Admiralty Rule 42 and in answer to the petition of Richard C. Cooper, admits, denies and alleges as follows:

I.

Answering unto Article I, respondent admits the allegations thereof.

II.

Answering unto Article II, respondent admits that the petitioner signed on as a member of the crew of the USNS Esecambia on or about September 19, 1956.

III.

Answering unto Article III, respondent alleges

in this regard that the USNS Escambia was operated by the United States of America through its operating agent Joshua Hendy Corporation; respondent denies each and every, all and singular, the remaining allegations thereof, not herein otherwise admitted or denied.

IV.

Answering unto Article IV, respondent admits the allegations thereof.

V.

Answering unto Article V, respondent alleges in this regard that petitioner left the USNS Escambia on May 7, 1957 at the Port of Sasebo, Japan; respondent alleges that it does not have knowledge or information sufficient to answer the allegations contained therein and upon that ground denies each and every, all and singular, the remaining allegations thereof, not herein otherwise admitted or denied.

VI.

Answering unto Article VI, respondent alleges that it does not have knowledge or information sufficient to answer the allegations contained therein and upon that ground denies each and every, all and singular, the allegations thereof but alleges in this regard that petitioner did leave some clothing and effects aboard the USNS Escambia.

VII.

Answering unto Article VII, respondent admits the allegations thereof.

VIII.

Answering unto Article VIII, respondent alleges that it has no knowledge or information sufficient to answer the allegations contained therein and upon that ground denies each and every, all and singular, the allegations thereof.

IX.

Answering unto Article IX, respondent alleges that it does not have knowledge or information sufficient to answer the allegations contained therein and upon that ground denies each and every, all and singular, the allegations thereof, but alleges that the USNS Escambia was put to an expense of at least \$56.44 in this regard.

X.

Answering unto Article X, respondent admits the allegations thereof.

XI.

Answering unto Article XI, respondent admits the allegations thereof.

XII.

The allegations of Article XII require no answer.

XIII.

Answering unto Article XIII, respondent alleges that it has no knowledge or information sufficient to answer the allegations contained therein and upon that ground, denies each and every, all and singular, the allegations thereof.

XIV.

Answering unto Article XIV, respondent alleges

that it has no knowledge or information sufficient to answer the allegations contained therein and upon that ground denies, each and every, all and singular, the allegations thereof.

Wherefore respondent prays that this matter be set down for hearing at such time as will give each party sufficient time and notice to make the necessary preparation, take the necessary depositions, subpoena the necessary witnesses, discover the full facts and present the same to the Court; and that after such sufficient time and notice and after a full hearing, findings of fact pursuant to Admiralty Rule 46 $\frac{1}{2}$ be made; and that the Petition of Richard C. Cooper be dismissed and the above wages forfeited to the United States of America in accordance with law on the grounds that Petitioner deserted the USNS Escambia; and that the Clerk of this Court be directed to remit the said funds on deposit in the Registry to the Treasurer of the United States of America; and that the United States of America may have such other and further relief as to the Court may seem just and equitable.

LLOYD H. BURKE,

United States Attorney,

/s/ KEITH R. FERGUSON,

Special Assistant to the Attorney
General,

/s/ JERRY W. MITCHELL,

Attorney, Department of Justice,
Proctors for Respondent

United States of America.

Certificate of Mailing Attached.

[Endorsed]: Filed September 20, 1957.

United States District Court, Northern District
of California, Southern Division

No. 20956

IN THE MATTER OF THE PETITION OF
RICHARD C. COOPER, SEAMAN, FOR
AN ORDER SETTING ASIDE THE FOR-
FEITURE OF HIS WAGES, CLOTHING
AND EFFECTS, FOR DESERTION

ORDER

Upon consideration of the verified petition on file herein, and after hearing and good cause being shown therefor, and it appearing to the Court that the Master erroneously entered petitioner in the log as a deserter; and that in the light of additional evidence adduced at the hearing \$1800.57 of his wages, his clothing and effects should be returned to him; and that none of his wages should be forfeited to the United States, and that the operator of the vessel is entitled to none of petitioner's wages for expenses incurred;

It Is Hereby Ordered that the Clerk of this Court draw a check in favor of Richard C. Cooper in the sum of \$1799.42, and a check in favor of C. W. Calbreath, Clerk, in the sum of \$1.15, Clerk's fees, and

It Is Further Ordered that the United States Shipping Commissioner for the Port of San Francisco deliver to petitioner all his clothing and effects which may be in the said Shipping Commis-

sioner's custody or control, upon taking receipt therefor.

Dated: September 30, 1957.

/s/ MICHAEL J. ROCHE,
Chief Judge, United States District Court, North-
ern District of California.

[Endorsed]: Filed September 30, 1957.

[Title of District Court and Cause No. 20956.]

NOTICE OF APPEAL

To: The Clerk of the Above Entitled Court:

To: Richard C. Cooper:

Please Take Notice that the United States of America, petitioner and claimant in the above entitled action, does hereby appeal to the United States Court of Appeals for the Ninth Circuit from the Order of this Court made on September 30, 1957 dismissing the petition of the United States and from the order and decree of this Court made, entered and filed on September 30, 1957 ordering that funds in the Registry be paid over to petitioner Richard C. Cooper and from each and every part of the said orders and decree.

LLOYD H. BURKE,
United States Attorney,

/s/ KEITH R. FERGUSON,
Special Assistant to the Attorney
General,

/s/ JERRY W. MITCHELL,
Attorney, Department of Justice,
Proctors for Respondent
United States of America.

Certificate of Mailing Attached.

[Endorsed]: Filed October 1, 1957.

[Title of District Court and Cause No. 20956.]

DESIGNATION OF CONTENTS OF RECORD
ON APPEAL

Appellant hereby designates for inclusion in the record on appeal herein each and every part of the record herein, including the docket entries.

LLOYD H. BURKE,
United States Attorney,

/s/ KEITH R. FERGUSON,
Special Assistant to the Attorney
General,

/s/ JERRY W. MITCHELL,
Attorney, Department of Justice,
Proctors for Appellant
United States of America.

Certificate of Mailing Attached.

[Endorsed]: Filed October 1, 1957.

[Title of District Court and Cause No. 20956.]

DOCKET ENTRIES

1957

Aug. 20—U. S. Shipping Commr. received \$1800.57.

Sep. 4—Filed petn. of U. S. for wages.

5—Ord. process issue.

—Filed order to issue Citation.

—Issued Citation.

9—Filed Citation unexecuted.

19—Filed seaman's petition.

20—Filed answer of U. S.

24—Filed depos. Edward L. Wheeler.

27—Filed order consolidated with 20954-20955.

—Ord. assigned to Judge Roche for hearing.
(Carter)—Hearing held, evidence introduced, con.
Sept. 30 for further hearing. (Roche)30—Hearing resumed, evid. introduced.
(Roche)—Ord. petrs. mo. to dis. the Gov'ts. claim
granted, petitions of the seaman for wages
granted, charge of desertion set aside, Mo.
of U. S. for stay of execution denied.—Filed and entered Order granting sea-
man's petition.

—Filed Notice of Appeal (U. S.).

—Filed order staying execution. (Judge
Healy)

Oct. 1—Filed notice of appeal (U. S.).

—Filed designation of contents of record on
appeal.

Wristwatch in safe.

[Title of District Court and Cause No. 20956.]

CERTIFICATE OF CLERK

I, C. W. Calbreath, Clerk of the United States District Court for the Northern District of California, do hereby certify that the foregoing and accompanying documents and exhibits, listed below, are the originals filed in this Court in the above-entitled case and that they constitute the record on appeal herein.

Account of Wages and Effects of Deserting Seamen.

Petition of Richard C. Cooper for an Order setting Aside the Forfeiture of his wages, Clothing and effects, for Desertion.

Answer of Respondent United States of America.

Citation in Admiralty with Marshal's Return Executed thereon.

Order for Issuance of Citation.

Petition of the United States.

Order Setting Aside the Forfeiture of Wages, Clothing and effects, for Desertion.

Notice of Appeal.

Notice of Appeal.

Designation of Contents of Record on Appeal.

Docket Entries.

Minute Order.

In Witness Whereof, I have hereunto set my

hand and affixed the seal of said District Court,
this 2nd day of October, 1957.

[Seal] C. W. CALBREATH,
 Clerk,

/s/ By J. P. WELSH,
 Deputy Clerk.

In the District Court of the United States, North-
ern District of California, Southern Division

In Admiralty—No. 20,954

IN THE MATTER OF THE PETITION OF
JAMES P. STAPLES.

No. 20,955

IN THE MATTER OF THE PETITION OF
BERNARD D. OSLIN.

No. 20,956

IN THE MATTER OF THE PETITION OF
RICHARD C. COOPER.

TRANSCRIPT OF PROCEEDINGS

Before: Hon. Michael J. Roche, Judge.

Appearances: For Petitioners Staples and Cooper: Charles M. Haid, Jr., Esquire; For Petitioner Oslin: Herbert Resner, Esquire; For Respondent: Lloyd H. Burke, United States Attorney, Keith R. Ferguson, Special Assistant to the Attorney Gen-

eral, by Jerry W. Mitchell and John F. Meadows, Attorneys, Department of Justice. [1]*

* * * * *

(The following proceedings were had on the trial before Judge Michael J. Roche.)

Friday, September 27, 1957

The Clerk: In the matter of Richard C. Cooper, James P. Staples and Bernard D. Oslin, Petition for an order setting aside forfeiture of wages, clothing, etc.

Mr. Resner: Ready.

Mr. Mitchell: Ready.

Mr. Haid: Ready.

The Clerk: Will counsel state their appearances for the record, please.

Mr. Resner: Herbert Resner, for the petitioner Oslin.

Mr. Haid: Charles Haid, Jr., for petitioners Staples and Cooper.

Mr. Mitchell: Jerry W. Mitchell for the respondent United States.

The Court: In the interest of time—there has been no pretrial in this case, I take it?

Mr. Resner: No.

The Court: It may be that we can simplify the issues. Is there any way that we can do that under the conditions existing, gentlemen?

Mr. Haid: By stipulation concerning their employment.

* Page numbers appearing at top of page of Reporter's Original Transcript of Record.

The Court: Is there any necessity for amending the pleadings? None?

And the possibility of admissions of fact documents which will avoid unnecessary delay? By your silence I see that you are [23] not interested.

There are no expert witnesses to be called, are there?

Is there anything else that you have in mind that will aid us in getting proper results in this case?

Mr. Mitchell: At this time, your Honor, the United States would like to present a motion for consolidation of Richard C. Cooper's case, Admiralty No. 20,956. That has not been consolidated with the other two, although Judge Carter did consolidate 20,954 and 20,955.

The Court: No objections, gentlemen?

Mr. Haid: No, sir.

Mr. Resner: No, your Honor.

The Court: So ordered.

Mr. Mitchell: Your Honor, at this time the United States would like to make a motion for a default judgment in the case of Bernard C. Oslin, Admiralty No. 20,955.

The Court: Was he served, do you know?

Mr. Mitchell: Yes, your Honor.

The Court: The record discloses that he was served?

Mr. Resner: I assume that is directed to me, your Honor?

The Court: What is it?

Mr. Resner: I assume this is directed to me. I represent Mr. Oslin. And I hold in my hand three

copies of a paper which is called a "Motion for Judgment by Default or Other Appropriate Relief." The motion states that there is an affidavit [24] attached, but no affidavit has been served upon me. I have been served with three copies of the same paper called the motion but nothing else. And until I see the affidavit of course I have nothing to reply to. I don't know how this came to pass, but the Government failed to serve me with the proper or sufficient papers.

Mr. Mitchell: An affidavit was mailed to him at the same time as the other papers were mailed.

Mr. Resner: On the contrary, it was not, your Honor. These were the only three documents that appeared in the envelope that was sent to me. I can hand it up to the court to show you that they are copies of the same paper.

The Court: Have you a copy of that here?

Mr. Mitchell: Yes, sir.

The Court: Serve counsel with it now.

(The paper was handed to counsel.)

Mr. Resner: May I have a minute to look at it, Judge?

The Court: Certainly.

Mr. Resner: I have read this. Now may I make a statement?

The Court: You may.

Mr. Resner: This is directed to the deposition of the petitioner Oslin, but I would say on September 19th, I believe it was, we were in Judge Carter's court and the Government filed a motion for an order to take Oslin's deposition on Friday of that

week and Judge Carter granted the motion. I told Judge [25] Carter at the time that my client was in Oakland and had no phone and that it was difficult for me to communicate with him, and that if I could produce him I would bring him. I had no objection. I neither heard from Oslin nor could I get in touch with him, so when Friday came I couldn't produce him for the deposition, and I so advised Mr. Mitchell.

As your Honor knows, on Monday I started a trial here and it continued all week until yesterday. On Tuesday at the lunch period I called Mr. Mitchell and told him that I had heard from Oslin and I could produce him that afternoon after court was concluded here at 4:00 o'clock, and I would be happy to bring him upstairs to Mr. Mitchell's office and let him take his deposition. Mr. Mitchell said that they didn't want the deposition because it was too late for discovery at that point on Tuesday of this week and that therefore he was going to resort to what relief he thought was appropriate in the matter. They not wanting to take Mr. Oslin's deposition on Tuesday, there was nothing further that I could do.

Their motion for default is predicated upon the proposition that Mr. Oslin was not available on Friday; but if your Honor cares to verify it with Judge Carter, you will find that he said at the time that if I could produce him I should, but, obviously, I could not be required to make a guarantee to produce the witness. And that is what it is all about. After Tuesday, the burden is upon the Government

for failing to take [26] Oslin's deposition. I have always been willing to cooperate with them, but they have taken a very, shall I say, intransigent position in this case, your Honor.

Mr. Mitchell: On the contrary, your Honor, as I stated in my affidavit, he contacted us Friday at the commencement of the deposition——

The Court: I had him in here all week and kept him busy.

Mr. Mitchell: Yes, your Honor, but this is a week ago.

The Court: Every hour of the week too.

Mr. Mitchell: At that time a deposition had been set previous to this and he did not appear at that time, by notice. Following the noticed deposition and failure to appear, the Government appeared and asked for an order. He did not appear at the time of the order but shortly before the time the ordered deposition he called me and stated that he would bring Mr. Oslin in on Monday, which was the day he started the trial in here, I understand. At that time he didn't mention the trial; he said he would bring him in for deposition. At the time I stated that I would be available for the deposition but I didn't waive the Court order. He did not appear. And as he said, he did call me Tuesday and offered the deposition for Wednesday noon, which we felt was too late for our purposes of discovery.

The Court: Is he here now?

Mr. Resner: Yes, he is here, your Honor, sure; he has been available all week. I have not refused to give them the [27] deposition, but apparently

the Government takes the position, your Honor, that when they blow the whistle we are supposed to run. After all the convenience of all parties has to be served.

The Court: Is the matter submitted, gentlemen?

Mr. Resner: Yes.

The Court: The motion will be denied. Let us proceed.

Mr. Mitchell: Call Mr. Johnson to the stand please.

FRANK A. JOHNSON

called as a witness on behalf of the respondent, being first duly sworn, testified as follows:

Q. (By the Court): What is your full name, please? A. Frank A. Johnson.

Q. Where do you live, Mr. Johnson?

A. In Alameda, sir; 2065 Buena Vista, Alameda.

Q. And your business or occupation?

A. I am United States Coast Guard Shipping Commissioner.

Q. United States Coast Guard?

A. Yes, sir.

Q. Shipping Commissioner. How long have you been so engaged?

A. As the Shipping Commissioner?

Q. Yes.

A. One year as Shipping Commissioner.

Q. Prior to that time?

A. Coast Guard 20 years, Coast Guard.

Q. In what capacity? [28]

A. In various capacities; Chief Boatswain's Mate at present.

(Testimony of Frank A. Johnson.)

Q. And located where, on this coast, during that time?

A. Also the past seven years on this coast.

The Court: Take the witness.

Direct Examination

Q. (By Mr. Mitchell): In your occupation as Shipping Commissioner do you have custody of those records—of any shipping articles.

A. We do.

Q. Do you have with you at this time the articles for the U.S.N.S. Escambia? A. Yes, sir.

Q. For the voyage starting September, 1956 and starting August, 1957?

A. Right, sir.

Q. Would you look at those articles and read for the Court whether or not the three petitioners, James P. Staples, Bernard D. Oslin and Richard C. Cooper are included on those?

A. They are. Which one would you like first?

Q. The articles, please. As to James P. Staples, in what capacity did he serve?

A. Staples? Staples was a pump man.

Q. What date did he sign aboard?

A. Staples signed on on the 19th of September, 1956.

Q. Did he sign before the Shipping Commissioner? A. He sure did, sir. [29]

Q. As to Mr. Bernard D. Oslin, is he on those articles? A. Mr. Oslin was——

(Testimony of Frank A. Johnson.)

Q. In what capacity?

A. Mr. Bernard Oslin, he was on there as deck maintenance.

The Court: Deck maintenance?

A. Deck maintenance.

Q. (By Mr. Mitchell): What date did he sign aboard?

A. He signed on on the 19th of September, 1956.

Q. Before a Shipping Commissioner?

A. Before a Shipping Commissioner, yes.

Q. And as to Mr. Richard C. Cooper, in what capacity did he serve?

A. Richard Cooper was an a.b. and he signed on on the 19th of September, 1956.

Q. Before a Shipping Commissioner?

A. Before a Shipping Commissioner.

Q. Would you read the front of those articles and state for what length of time they were made?

A. Yes, sir; these articles were made for 12 months.

Q. For 12 months? A. 12 months.

Q. And what type of voyage?

A. The voyage was from Los Angeles, California to a point in the Pacific ocean to the westward of Los Angeles, California, thence to or as may be ordered or directed by the U. S. Government [30] or any department, commissioner, or agency therefor.

Q. Thank you. Do you have the official log book of the U.S.N.S. Escambia?

A. Yes, sir, I do.

(Testimony of Frank A. Johnson.)

Mr. Resner: Are the articles being offered in evidence, your Honor?

Mr. Mitchell: Yes, they are, your Honor.

The Court: What is it?

Mr. Mitchell: We offer the articles in evidence.

The Court: Let them be admitted and marked.

The Clerk: Respondent's Exhibit A admitted and filed in evidence.

(The document referred to was thereupon received in evidence and marked Respondent's Exhibit A.)

Q. (By Mr. Mitchell): Can you identify the books you have in your hand?

A. Yes, sir, the official logs of the Escambia.

Q. For what voyage?

A. This particular voyage was 1.

Q. What period did it cover?

A. It was from September 19—I'll make sure of that—the 19th of September, 1956 and voyage terminated at San Francisco on the 8/15/57.

Mr. Mitchell: At this time we would offer the official log books in evidence, your Honor as respondent's next in order. [31]

Mr. Haid: At this time I would like to object to the introduction of any purported log book of the Escambia as a respondent's exhibit or in any other fashion. There has been no showing here under the statute, 28 United States Code Section 1732, that this is the log book of the Escambia by anyone who had custody or control or made any entries in that log book. You have here a man in San Fran-

(Testimony of Frank A. Johnson.)

cisco, apparently from the Shipping Commissioner's office, who is endeavoring to state, apparently, that this particular book was kept in the regular course of the ship's business on a vessel that this man was not a member of and at a time apparently when the voyage was long concluded. I don't believe that this offer that has been made by the Government is sufficient that this log book is the log book of the Escambia or that any entries made in the log book, if it is the log book, were made in the regular course of ship's business.

Even if that were supposedly shown by this man, there is nothing to show by whom the entries were made or when they were made. I don't see how the Government can show on this showing that the offer of this log book falls within the frame work of the Business Records Entry Act under which I assume they are trying to offer it.

Mr. Resner: I join in that objection, your Honor.

Q. (By Mr. Mitchell): Would you state the normal disposition of a log book, the official log book, from a vessel at the termination of its voyage? [32]

A. At the termination of a voyage the shipping commissioner, which I am designated as, or which may one be, goes to the ship and pays the crew off, but before—prior to paying this crew off the log is examined and checked by the deputy shipping commissioner, and if there is any errors in the log it is to be brought to the attention of our investigators. The log and—and on completion of the voy-

(Testimony of Frank A. Johnson.)

age the log and the articles are returned to our office at 630 Sansome Street.

Q. Does that refer to all log books—all official log books—of any vessel?

A. Of any vessel; not particularly in San Francisco, but any port they may terminate their voyage in this particular case it is San Francisco.

Q. Whenever the vessel terminates its voyage, the shipping commissioner has jurisdiction and custody of the log book? A. That is correct.

Mr. Mitchell: We submit, your Honor, that this log is the official log of the *Escambia* and is coming from the proper custody at this time.

The Court: Let me inquire. When did you first see this log book?

The Witness: This particular log?

The Court: Yes.

The Witness: This morning, sir.

The Court: That is the first time you saw it?

The Witness: Yes, sir. [33]

The Court: Where did you get it?

The Witness: I got it from Mr. Mitchell here.

The Court: From whom?

The Witness: Mr. Mitchell.

The Court: And when?

The Witness: This morning, sir.

The Court: And aside from that, you know nothing about it, only it is here?

The Witness: Only what the log entries are.

The Court: The proper foundation hasn't been laid for this log.

(Testimony of Frank A. Johnson.)

Mr. Mitchell: Has been laid, your Honor?

The Court: Has not.

Mr. Mitchell: The log book was delivered approximately a week ago, or two weeks ago, when these cases first came on for hearing.

The Court: There is an absence of that in this record. You must develop and lay the foundation.

Mr. Mitchell: Very well, your Honor. At the time that the case of Mr. James P. Staples came on for hearing before Judge Carter we called the shipping commissioner and asked them to come forward and bring the log books and the articles for this vessel. They did that. They were not needed that day because the trial was set over for today, and at that time they suggested [34] that they leave them with me, and I signed a receipt for them, to be held until the time of trial, at which time we asked them to send another man to sustain the part that the official log books and the articles are taken into the custody of the shipping commissioner at the time of signing off the vessel.

Mr. Resner: Counsel can't lay a foundation by making a statement, your Honor.

The Witness: Your Honor, these have been receipted for, these logs.

The Court: What is that?

The Witness: These logs have had a signed receipt for at the shipping commissioner's office.

The Court: We don't question that at all, but they are entitled to know the history of this log,

(Testimony of Frank A. Johnson.)

who had it, who examined it, and the manner in which it was kept.

Mr. Resner: Still no foundation, your Honor.

The Court: I will give counsel an opportunity to lay the foundation.

Mr. Mitchell: One moment, your Honor. The shipping commissioner has testified that their office is the official custodian of all log books and articles, and by that testimony he has shown that this is an official record and is so kept in his custody. As to the passing of the log book——

The Court: He didn't see it until you gave it to him this morning. [35]

Mr. Mitchell: Previous shipping commissioners have seen it and I have receipted for it.

The Court: You haven't it in the record. They are entitled to examination on this. I will give you time to get the necessary witness here to lay the foundation for this.

Mr. Mitchell: At this time the respondent would ask for a recess until this afternoon for the possibility of bringing in the original shipping commissioner that had these articles, your Honor.

Mr. Resner: May I say something?

The Court: We will go on with this case. Withdraw this witness, and hear any other testimony.

Mr. Mitchell: Pardon me?

The Court. We will go on with this case and withdraw this witness. You may call him this afternoon, if necessary.

Mr. Mitchell: Thank you, your Honor.

At this time, your Honor, the respondent would ask that the depositions in this case be unsealed and read into the record.

The Court: Any objections?

Mr. Resner: No, your Honor.

The Court: Proceed.

Mr. Mitchell: This is the deposition of Morris W. Mote taken September 19, 1957, in the matter of the petitions of James P. Staples, Bernard D. Oslin and Richard C. Cooper.

Appearances for petitioners Staples and Cooper [36] Charles M. Haid, Jr., Esquire; for petitioner Oslin, Herbert Resner, Esq.; for the respondent Lloyd H. Burke, United States Attorney, Keith R. Ferguson, Special Assistant to the Attorney General, by Jerry W. Mitchell, Esq., Attorney for Department of Justice.

Mr. Resner: If your Honor please, can Mr. Haid and I follow the reading on this in the original deposition and the Government read from their copy of it, please?

The Court: No objection?

(Mr. Mitchell thereupon read from page 2, line 1 to page 2, line 24, inclusive, as follows:)

“Mr. Mitchell: It is now the hour of 1:45 p.m. and Mr. Resner has not made an appearance in this matter, so we will proceed with the deposition, call having been placed to Mr. Resner’s office and he not being present in his office.

“This deposition of Captain Morris W. Mote is pursuant to Notice and is being taken de bene esse

(Deposition of Morris W. Mote.)

before a Notary Public authorized to administer oaths, at Room 447-A, United States Post Office Building, Seventh & Mission Streets, San Francisco, California, on the 19th day of September, 1957, commencing at the hour of 1:30 p.m. and continuing thereafter from day to day until completed.

"Be It Remembered that, pursuant to Notice, and on Thursday, September 19, 1957, commencing at the hour of 1:30 o'clock p.m. thereof, at the office of the Admiralty and Shipping Section, Department of Justice, Room 447-A, United States Post Office Building, Seventh and Mission Streets, San Francisco, California, before me, Harry A. Canon, a Notary Public in and for the City and County of San Francisco, State of California, personally appeared Morris W. Mote, called as a witness by the respondent herein, being by me first duly sworn, was thereupon examined and interrogated as herein after set forth."

The Court: This was on the 19th?

Mr. Mitchell: Yes, your Honor.

The Court: How could he be there when he was engaged here?

Mr. Mitchell: Pardon?

The Court: How could he be there when I had him busy here?

Mr. Resner: I did appear your Honor, it was Friday before we started the trial. We started on the 23rd, your Honor.

The Court: Oh, that's right. I got confused on the date.

(Deposition of Morris W. Mote.)

Mr. Resner: But I appeared on the deposition, anyway, your Honor. There's no point there.

The Court: Proceed, counsel.

(Mr. Mitchell proceeded with the reading of the deposition from page 2, line 25, to and including to page 11, line 16, as follows:)

"Charles M. Haid, Jr., Esquire, appeared as proctor on behalf of the petitioners, James P. Staples and Richard C. Cooper;

"Herbert Resner, Esquire, appeared as proctor for the petitioner, Bernard D. Oslin; and

"Lloyd H. Burke, United States Attorney, Keith R. Ferguson, Special Assistant to the Attorney General, represented by Jerry W. Mitchell, Esquire, Attorney, Department of Justice, appeared as proctors for the Respondent.

"Mr. Mitchell: It is now 1:51. Mr. Resner is present.

"May it be stipulated that all objections, except as to the form of the questions propounded and the responsiveness of the answers, shall be reserved to each of the parties until the time of trial; and that the reading, signing and sealing of the deposition by the witness is waived and the deposition shall have the same force and effect as though signed and sealed?

"Mr. Resner: I won't stipulate to that. I will stipulate to the form of the questions and the responsiveness of the answers, not as to the waiver of signing and sealing. I will not stipulate to the waiver of signature to the deposition.

"Mr. Haid: I will stipulate on all of it.

(Deposition of Morris W. Mote.)

“Mr. Mitchell: Fine.

“May it be further stipulated that this deposition shall be reported by Harry A. Cannon, Certified Shorthand Reporter and a disinterested person, and thereafter transcribed by him to type-writing, the original to be forwarded under the seal of the Notary Public to the Clerk of the United States District Court for the Northern District of California, Southern Division?

“Mr. Resner: Yes.

“Mr. Haid: So stipulated.

“Mr. Mitchell: In this regard, Mr. Haid, may it be stipulated that we will cover and include Mr. Cooper’s case in this deposition?

“Mr. Haid: Yes.

“MORRIS W. MOTE

called as a witness on behalf of the respondent, upon being first duly sworn to tell the truth, the whole truth, and nothing but the truth, testified as follows:

“Examination by Mr. Mitchell

“Mr. Mitchell: Q. State your name, please.

“A. Morris W. Mote.

“Q. How old are you, Captain? “A. 58.

“Mr. Resner: Before you start, is this one deposition or three separate depositions?

“Mr. Mitchell: We are going to proceed on one deposition.

“Mr. Resner: O.K. I don’t want the record or anything I may say or may not say here to mean that I concede that the witness’ testimony as it ap-

(Deposition of Morris W. Mote.)

plies to the petitioners Staples and Cooper applies to the case of the petitioner Oslin. In other words, I am saving all of my legal objections in that regard.

“Mr. Mitchell: Q. What is your residence, Captain Mote?

“A. 2019 Barbara Drive, Palo Alto.

“Q. Is there another address where you can be reached? “A. When?

“Q. At any time, if you are not reachable at that address.

“A. 1211 East Monte Vista, Phoenix, Arizona.

“Q. Captain Mote, where will you be on or about the 27th of September?

“A. To the best of my knowledge, I will be at 1211 East Monte Vista, Phoenix, Arizona.

“Q. Do you know how long you will be there?

“A. My plans are indefinite.

“Q. What is your occupation, Captain Mote?

“A. Master Mariner.

“Q. What licenses do you hold in that regard?

“A. Unlimited Master, ocean.

“Q. When did you obtain that license?

“A. You mean my original Master's license?

“Q. Yes.

“A. In the month of July, 1945.

“Q. You have held that license since that time?

“A. Yes, and the renewals thereof.

“Q. How long have you sailed as a Master, Captain?

“A. As Master, about four years.

(Deposition of Morris W. Mote.)

"Q. On what type of vessels?

"A. Tankers.

"Q. What was the last vessel you sailed on?

"A. USNS Escambia.

"Q. How long were you aboard that vessel?

"A. From July 30, 1956, to August 19, 1957.

"Q. In what capacity?

"A. As Chief Mate from July 30 to August 21, 1956; as Master August 22, 1956 to August 19, 1957.

"Mr. Mitchell: Will you please mark this document as Respondent's Exhibit 1 for identification?

"(Rough log book, USNS Escambia, April 20, 1957-June 19, 1957, marked for identification Respondent's Exhibit No. 1.)

"Mr. Mitchell: Q. Captain, I hand you a document. Do you recognize it? "A. I do.

"Q. Will you state what it is?

"A. It is a rough log book, USNS Escambia, for the period April 20, 1957, to June 19, 1957.

"Q. Captain, do you recall where your vessel was on or about the early part of May, May 5 or thereabouts?

"A. May 5—May 4 to May 8, in Sasebo, Japan, except for a sortie to clean tanks.

"Q. Do you remember when the vessel arrived in Sasebo?

"A. I don't remember the hour, no.

"Q. Would you refer to the log book, please, and find us the date and the time?

"A. (Witness referring to Respondent's No. 1.)

(Deposition of Morris W. Mote.)

“Mr. Resner: Is the witness using the log book in order to refresh his recollection?”

“The Witness: Yes.

“Mr. Mitchell: Yes, he is.

“Mr. Resner: Do you have any independent recollection of when you arrived, Captain?”

“The Witness: The date. I couldn't give you the hour. I am looking up the hour.

“Mr. Resner: I understand. But before you can refresh your recollection, we have to exhaust the possibility of whether you have an independent recollection.

“The Witness: I arrived on May the 4th, 1957.

“Mr. Resner: And the hour is unknown to you without reference to the log book?”

“The Witness: Yes.

“Mr. Mitchell: Q. Refer to the log book, please.

“A. (Witness referring to Exhibit 1.) The hour of arriving at Sasebo was 1148.

“Q. What time did the vessel dock; what time did she dock?”

“A. I would have to refer to the log book to refresh my memory on that matter.

“Q. You are saying, Captain, you have to refer to the log book to refresh your memory as to times?”

“A. As to the hour that the vessel docked.

“Q. Let the record show that. Would you refer, then?”

“A. (Witness referring to Exhibit 1.) 1330. The vessel was all fast.

“Mr. Haid: What time?”

(Deposition of Morris W. Mote.)

"Mr. Resner: 1:30.

"Mr. Mitchell: 1:30.

"Mr. Resner: Could I interrupt a second while we are on this subject? Exactly where did it dock?

"The Witness: At the Iori Zaki Dock.

"Mr. Mitchell: Q. Following docking, what time was your cargo started discharging?

"A. It would be necessary to refer to the log book to refresh my memory as to the exact time.

"Q. All right, do that.

"A. (Witness examining Exhibit 1.)

"Mr. Resner: How could any of these questions be material to the charge in this case? I object upon the ground of materiality.

"Mr. Mitchell: You can answer the question.

"A. Repeat the question.

"(Question read by the reporter.)

"A. At 1810 on May the 4th, 1957.

"Mr. Haid: I take it that is oil you were discharging?

"The Witness: JP-4—jet fuel.

"Mr. Mitchell: Q. Would you state the time—first of all, Captain, when you arrive in a port, what notice is given of any future movements of the vessel or sailings, whatever may happen?

"A. As soon as it can be determined, the sailing board is posted indicating any future movement of the vessel.

"Q. Who sets the time for that future movement?

(Deposition of Morris W. Mote.)

“A. Well, the chief mate is the one who is responsible for the cargo and usually makes the decision as to the time any cargo movement will become—cargo handling will be completed.

“Q. Where is such notice of movement posted?

“A. On a blackboard at the gangway.

“Q. Do you recall at what time or if a board was posted on your arrival in Sasebo?

“A. I don't recall.

“Q. Would it be shown in the log book?

“A. It would.

“Q. Would you refer to that and see.

“A. (Witness examining.) At 1400 the sailing board was posted.

“ ‘Call back deck department. Vessel shifts May 5 at 0900.’

“Q. Is that a direct quote from that log book, Captain?

“A. I will continue it. ‘(9 AM.)’

“Q. Now, Captain, do you recall if the vessel did shift at that time on May 5?

“A. I don't recall. There were several changes in movement while we were there. I do not recall.

“Q. Can you recall any of the times of that without refreshing your memory?

“A. No, I can't.

“Q. Let's refer to the log book, then, further. Do you find any entries concerning sailing board?

“A. (Witness examining log book.) Yes. 0900 ‘Deck Department crew check made. All on board except Roggemans and Corral.’

“ ‘1000. Changed crew call back to 0700 Monday

(Deposition of Morris W. Mote.)

May 6, 1957, on MSTTS orders to hold vessel at dock until departure to sea (for tank cleaning purposes.)'

Q. Going on with——

"Mr. Resner: Could I see that log book for a few minutes, please?

"Mr. Mitchell: Yes. (Mr. Resner examining Exhibit No. 1.)

"Mr. Resner: Go ahead.

"Mr. Mitchell: Q. Captain, on May 5 could you tell us when cargo was completed, discharge of cargo?

"A. Not without referring to the log book.

"Q. Would you return the log book, please, Mr. Resner?

"Mr. Resner: Yes. (Handing to witness.)

"(Witness examining log book.)

"A. Cargo was completed on May 5 at 1315.

"Mr. Mitchell: Q. That is 1:15 p.m. Now, the last sailing board entry you read was that the crew was called back for 0700 on May 6. Can you recall whether the vessel sailed at that time on May 6?

"A. I can't recall the exact hour that it did sail.

"Q. Will you refer to the log book and read the entry concerning sailing, please?

"A. The last line was off the dock at 0820.

"Q. And where did the vessel go?

"A. Departure was at 0900.

"Q. Where did the vessel go at that time, Captain?

(Deposition of Morris W. Mote.)

“A. Just outside the harbor to clean tanks.

“Q. To clean tanks? “A. Yes.

“Q. Is this a standard or routine procedure on a tank ship?

“A. No, the purpose of going outside and cleaning tanks was that we were to, in fact, load another cargo. Normally we would clean tanks on the ballast leg of the voyage, on our way to the next port. And this is that we cleaned tanks and return to Sasebo.

“Q. In this case what did the cleaning of the tanks consist of?”

Mr. Resner: If your Honor please, I would like to interpose an objection at this time on the grounds of materiality, to [37] this question and the whole series of questions that follows, knowing what is coming. The proposition was that this tank ship went outside of Sasebo for a while and cleaned out the tanks. The contention of the Government in this case is that these three seamen deserted the ship at Sasebo. The only issue in this case, your Honor, is whether these seamen deserted the ship and whether their money ought to be forfeited to the Government. The question of whether this vessel was cleaning tanks, out to clean tanks, why they cleaned tanks, their movements around the dock, and all of those things have nothing to do with the only issue before the Court, namely the issue of desertion, and I think it only consumes an awful lot of needless time to go into these petty details which have nothing to do with the issues in this

(Deposition of Morris W. Mote.)

case, so I object on the ground of materiality.

Mr. Haid: I join in that objection, your Honor.

Mr. Mitchell: The Government's position on this is that at the time we took the deposition, we had no knowledge of what the defense would be to the charge of desertion. In some cases a charge is made that the sailing board was not posted, the vessel's movements weren't known and therefore they missed the vessel. In order to forestall that, we have introduced the evidence as to the movements of the vessel and the actual time the board was posted and the amount of notice given to the crew in order to alert them as to the time of sailing and movement. [38] Therefore we feel that it is material to the case.

The Court: For that limited purpose I will allow it.

Mr. Resner: But it doesn't help any, your Honor.

The Court: What is it?

Mr. Resner: I say it doesn't help. How do you butterworth a ship? They clean it out with hot water. What has that got to do with this case.

Mr. Haid: This all occurred two or three days before the charge of desertion. The ship was fooling around in and out of Sasebo.

The Court: Isn't it a fact that the issue in this case and the only issue in this case is, did these three men desert the ship?

Mr. Mitchell: That is true, your Honor, but part of the time of these movements in the port some of the men were missing during the movements and

(Deposition of Morris W. Mote.)

did not return to the vessel at any time subsequent before sailing.

Mr. Resner: That still has nothing to do with whether they deserted. That is the ultimate question here, your Honor, the question of desertion. The movement of the ship and what the ship did has nothing to do with it. If they deserted, they deserted.

The Court: What date was this desertion?

Mr. Mitchell: One of the men deserted on May 5th, and two of them did their last duty on May 7th. The vessel sailed from [39] Sasebo on May 8th.

Mr. Resner: There couldn't have been a desertion until May 8th under any circumstances.

The Court: Why not?

Mr. Resner: Because the vessel was in port. You get desertion when the ship leaves and the men aren't on it.

Mr. Mitchell: The fact remains, your Honor, they did not do their duties on those days and it is all material to establish intent to desert.

Mr. Resner: If they didn't do their duty, your Honor, the remedy is very simple on that. The master logs the man, he brings him up and reads the log and docks him. We are not concerned with that here. Your Honor isn't passing on whether they did their work or not, or whether they should be docked or not. Your Honor is trying to determine whether the Government has a right to forfeit all the money these men had earned by deserting the ship on May 8th when it sailed from Sasebo. That

(Deposition of Morris W. Mote.)

is the only issue here. They can keep us here for four days of this kind of triviality, but the only issue is desertion, your Honor.

Mr. Haid: It is quite simple, your Honor. These three men were not aboard when the ship sailed on May 8th shortly after 5:00 p.m. on that date. Were they ashore because they intended to desert or were they ashore because they failed to join because of some mishap or something? What the ship was [40] doing on May 4th, 5th, 6th, 7th, and 8th up to the time of sailing when they were charged with desertion—butterworthing the tanks, shifting ship, discharging cargo, loading cargo, has nothing to do with this case.

Mr. Mitchell: On the contrary, your Honor, it is material for the reason that a person's intent is demonstrated by his actions, his statements, his activities and everything else which would bear on whether he had the intent to desert, and therefore whether he complained or whether he was dissatisfied would be absolutely irrelevant to the issue.

The Court: We have any number of these cases. As counsel has indicated, the only issue in the case is whether or not they deserted. Go right to it. The manner the ship was loaded a day or two before or after is immaterial.

Mr. Mitchell: It is immaterial to that point, but it is material to the point of establishing intent which is necessary to desertion.

The Court: Very well in the interest of time let us proceed subject to your motion to strike and over your objection.

(Deposition of Morris W. Mote.)

(Mr. Mitchell continued reading from the deposition page 11, line 16 to and including page 14, line 25, as follows:)

“Q. In this case what did the cleaning of the tanks consist of?

“A. Everything with hot water.

“Q. How is that done, just the general description? I mean, what type of equipment is used or what equipment aboard the vessel is in operation at that time?

“A. Pumps, Butterworth heating equipment, the Butterworth machine is something in the nature of a glorified lawn sprinkler which shoots hot water to all parts of the tank, at a pressure of 175 pounds, a temperature of 180 degrees.

“Q. I see. How long did that ‘butterworthing’ process take?

“A. I would have to refer to the log book, to be exact.

“Q. Would you do that, please?

“A. (Witness examining log book.) We started ‘butterworthing’ at 1037 on the 6th. Finished ‘butterworthing’ at 2145—no, cancel that. Everything was finished at 0030 on the 7th.

“Q. What were the movements of the vessel following completion of ‘butterworthing’, Captain?

“A. Proceeded slowly to the harbor entrance so as to make a daylight arrival, which is a requirement in that port. Arrived at 0542.

“Q. When you arrived at that port, did you enter? “A. Yes.

(Deposition of Morris W. Mote.)

“Q. Where did you proceed on entry?

“A. We were secured alongside Yokose Oil Dock at 0803.

“Q. Was any notice of future movements of the vessel posted?

“A. Refreshing my memory with the log book (examining log book), the sailing board was posted at 0800.

“Q. On what date?

“A. On the 7th, to read: ‘Vessel shifts at 0700 (7:00 a.m.) tomorrow 5-8-57. Call for deck department. Ship sails at 1400 (2:00 p.m.) Wednesday, 5-8-57.’

“Q. Did the vessel sail on May 8th?

“A. Yes. I would have to refresh my memory, looking at the log book, as to time.

“Q. Would you refer to the log book and give us the time the ship cleared the dock, please?

“A. At 1716 on May the 8th, the last line off the dock.

“Q. Were there any other movements prior to that time, Captain?

“A. There is an entry in the log book to the effect ‘0750 Change sail board to read “Vessel sails for sea 5-8-57 at 1600.”’

“Q. Were there any other movements prior to that?

“A. No, we said from Yokose Dock, Now, wait a minute, let me change that. We shifted from Yokose Dock to anchorage.

“Q. What time did you leave the dock?

(Deposition of Morris W. Mote.)

“A. We left the dock at 0713.

“Q. What time did you arrive at anchorage?

“A. We anchored at 0746.

“Q. And you read in at 0750 you changed the sailing board?

“A. Changed the sail board to read the vessel sails for sea at 1600.

“Q. Were there any other movements that day of the vessel?

“A. No, not till she sailed.

“Q. You originally read an entry that the vessel cleared the dock at 1716 and you have her at anchor now, Captain.

“A. Now, wait. 0713 we cleared the dock. We anchored at 0746. I will have to refresh my memory (referring to log). Oh, yes, we heaved anchor at 0903 and we moved to Iori Zaki dock.

“Q. What time?

“A. We were all fast at Iori Zaki dock at 1032. I remember now. We anchored because of traffic congestion and made fast at Iori Zaki dock at 1032.

“Q. And then?

“A. We loaded cargo at Iori Zaki dock until 1540.

“And at 1716 last line was off the dock and clear of the dock. And at 1806 departed Sasebo.

“Q. Was that your last movement at Sasebo on that day?

“A. The last movement in Sasebo was from anchorage to Iori Zaki Berth No. 3, and then from Iori Zaki Berth No. 3 we proceeded to sea.

(Deposition of Morris W. Mote.)

“Q. Thank you, Captain. Captain, at the commencement of this voyage what type of articles were assigned?”

“A. Foreign articles, voyage to port or ports westward of Los Angeles and back to the ports of discharge on the Pacific Coast of the United States for a term of not more than 12 months.

“Q. Have you sailed under such articles before, Captain?” “A. Yes.

“Q. On what type of vessels?”

“A. Navy tankers.

“Q. The same type of vessel as this one?”

“A. The same type of vessel.

“Q. Captain, how was the food during this trip?”

“Mr. Resner: Is there an issue about quality of the food in this case, Mr. Mitchell?”

“Mr. Mitchell: No, there is not.

“Mr. Resner: Well, the question is irrelevant.”

Mr. Resner: I object, your Honor, counsel says there is no issue about the quality of the food.

The Court: It may go out. The objection will be sustained. We are not concerned here with the food or how much was consumed. [41]

Mr. Mitchell: The same statement, if I may, your Honor, about intent. Whether the food was good or bad will raise part of the reason for leaving the vessel.

The Court: The Court has ruled. It will go out.

Mr. Mitchell: “Was there very much sickness aboard the vessel during the voyage?”

Mr. Resner: I object, your Honor, on the grounds

(Deposition of Morris W. Mote.)

of immateriality. There is no issue of sickness here.

The Court: Objection sustained.

(Mr. Mitchell continued reading from the deposition from page 15, line 11, to and including line 3, page 17, as follows:)

“Q. Captain, do you know James P. Staples, one of the petitioners in these causes?

“A. I do.

“Q. When and where did you know him?

“A. I know him on board this vessel, on the USNS Escambia.

“Q. Do you know when he boarded it, approximately?

“A. I don't remember whether he boarded with the crew we shipped in San Francisco or the replacements we shipped in San Pedro. It was either August 23 or September 19, if my memory serves me right, 1956.

“Q. What capacity was he serving in aboard the vessel?

“A. He came aboard the vessel dispatched from the union as oiler. When there was a vacancy, due to the inability of the union to fill, as second pumpman, he requested to go second pumpman, which was approved by the union, and he started the voyage from San Pedro as second pumpman aboard the vessel, if my memory serves me right.

“Q. What are the general duties of a second pumpman?

“A. The duties of a second pumpman are to assist the first pumpman in handling the cargo and

(Deposition of Morris W. Mote.)

the maintenance of cargo carrying machinery, and the chief engineer's department in the maintenance of machinery in general.

"However, Mr. Staples was promoted to first pumpman before the voyage was completed.

"Q. Do you happen to recall the date he was promoted? "A. I don't recall, no.

"Q. Approximately.

"A. I believe it was February, 1957, but I am not positive.

"Q. Was it prior to your arrival in Sasebo?

"A. Yes.

"Q. What would the duties of first pumpman be? Are there any additional duties, I should ask, in addition to the second pumpman's duties?

"A. The first pumpman is responsible for the maintenance of all cargo handling machinery and for the discharging of cargo and ballasting the vessel and unballasting the vessel.

"Q. Does he have any duties at the time of 'butterworthing'?

"A. Oh, yes, he is one of the most important people. He runs the stripping pumps and gets the dirty water out of the tank.

"Q. When did Mr. Staples last perform his duties aboard the vessel?

"A. I don't know the exact hour, but it was after midnight, on the morning of May 5.

"Q. What occurred at that time?"

Mr. Haid: If your Honor please, in anticipation of this answer, it is clearly hearsay in that the

(Deposition of Morris W. Mote.)

captain is being asked to give an answer as to something that somebody on board the vessel told him concerning Mr. Staples. He has already said that he doesn't know when Mr. Staples last performed his duty, and the question then "what occurred at that time?" It is obvious on the face of it that it is pure hearsay that the captain is being asked for. I object to this answer.

The Court: Is the matter submitted?

Mr. Mitchell: The question that started this was, your Honor, "I don't know the exact hour, but it was after midnight on the morning of May 5th." He is stating a time, and he is asked what occurred at that time. He didn't know the exact hour. [42]

Mr. Resner: But the answer is hearsay. The answer is, "A report was made to me by so and so about such and such."

The Court: That may go out, proceed.

Mr. Mitchell: (Reading) "Q. Who relieved him at that time? "A. The chief engineer.

"Q. Was he granted shore leave?

"A. Not by me.

"Q. At this time? "A. Not by me.

"Q. Do you know if he was granted shore leave by anyone? "A. I do not."—

Mr. Haid: If your Honor please, I would like to move to strike anything further in that answer of four or five more lines. The answer is given in the first three words which Mr. Mitchell has read, "I do not," and then he goes on to explain about something was said about this, that and the other.

(Deposition of Morris W. Mote.)

The Court: I can't anticipate what is coming, but if your statement is correct——

Mr. Haid: The question was, "Do you know if he was granted shore leave by anyone. A. I do not." And then he goes on——

Mr. Mitchell: He goes on to say something that he specifically told the man in his answer.

The Court: Proceed.

(Mr. Mitchell continued reading from the deposition from page 17, line 11 to and including page 17, line 22, as follows:)

"A. I do not, but I do know that when he asked time off when the vessel got in, I told him he could have time off after the cargo was out and the vessel was ballasted, and he was ordered by me to remain on board until the cargo was out and the vessel was ballasted.

"Mr. Haid: This is by you personally?

"The Witness: By me personally, as a result of a request by him for time off, there being no man to relieve him.

"Mr. Mitchell: Q. Did he know of the sortie for tank cleaning?

"A. I do not know whether he did or not. I didn't personally see him to tell him of it. I was informed that he had been told."

Mr. Haid: If your Honor please, I would like to move to strike out the last part of that answer. The question was, [43] "Did he know of the sortie for tank cleaning?" A. "I do not know whether he did or not. I didn't personally see him to tell

(Deposition of Morris W. Mote.)

him of it." And then he adds "I was informed that he had been told."

The Court: What he was informed may go out.

(Mr. Mitchell continued reading from the deposition from page 17, line 23 to and including page 23, line 24, as follows:)

"Q. Was he on board during your sortie for tank cleaning? "A. He was not.

"Q. Did he board the vessel on return from your sortie from tank cleaning?

"A. Not to my knowledge.

"Q. Where was he last seen by you?

"A. I don't know the exact place. I saw him ashore one time.

"Q. Did you speak to him at that time?

"A. I don't recall whether it was before or after the tank cleaning sortie, but I think it was after.

"Q. Did you speak to him at that time?

"A. I don't know whether I spoke to him directly, personally, or not. I sent a message to him, but whether it was delivered or not I can't say.

"Q. What was the purport of that message?

"A. A reiteration of a formerly stated principle that anyone missing a ship would be logged as a deserter.

"Mr. Haid: I take it all objections, in accordance with our original stipulation, are reserved?

"Mr. Mitchell: Yes, correct. That is as to the form of the question—as to the form of the question propounded and the responsiveness of the answer.

(Deposition of Morris W. Mote.)

"Mr. Haid: All right.

"Mr. Mitchell: Q. During the course of the voyage, prior to this time did Mr. Staples ever mention anything to you concerning the length of his intended stay aboard the vessel? "A. No.

"Q. Nothing at all? "A. No.

"Q. Did he ever ask for a mutual consent discharge?

"A. No, Mr. Staples did not.

"Q. After your sailing from Sasebo, did you receive any information concerning Mr. Staples from your agency?

"A. Upon arrival of the vessel in Yokohama, the agent informed me that Mr. Staples and Mr. Cooper had been shipped out on, I believe, the Alamo Victory, from Yokohama; that they had been returned from Sasebo by the Japanese Immigration Authorities, held until they were shipped.

"Q. To your knowledge did the vessel suffer any expense by reason of this failure to sail with the vessel?

"A. The only expense that had been incurred would be additional overtime that would be expended due to the fact that the vessel was short-handed.

"Q. Did you have to make any communications with your agency or with your controlling authority in the Far East concerning this?

"A. I sent the usual radiogram to the head office in Los Angeles apprising them of the fact that, of course, there would be some expense involved

(Deposition of Morris W. Mote.)

against the company and indirectly against the vessel for their maintenance and care while they were under the custody of the Japanese Immigration Authorities and any transportation involved in moving them about in Japan would be, of course, charged.

“Q. Now, as to Mr. Oslin, Captain, do you know him? “A. I do.

“Q. Where and when did you know him?

“A. Aboard the USNS Escambia, deck maintenance man.

“Q. During this voyage?

“A. During this voyage. He shipped aboard the vessel, if my memory serves me right, on August 21, 1956; signed foreign articles on August 19—September 19th, 1956; proceeded aboard the vessel, continued aboard during the voyage until May 8, 1957.

“Q. What were the general duties of a deck maintenance man in the capacity that Mr. Oslin was sailing?

“A. To work from 8:00 to 5:00, Monday through Friday, at sea and in port, at the direction of the boatswain under the orders of the chief officer.

“Q. What, if any, duties does he have during the shift of the vessel?

“A. Handling mooring lines, assisting in general in mooring and unmooring the vessel, as any deck hand.

“Q. When were these duties last performed by Mr. Oslin? “A. I believe on May the 7th.

(Deposition of Morris W. Mote.)

“Q. When was he last aboard the vessel?

“A. On May the 7th.

“Q. Was he granted shore leave at that time?

“A. I do not know. The chief mate may have or may not have granted him shore leave.

Q. When did you last see Mr. Oslin?

“A. To the best of my ability to recall, when we returned from tank cleaning sortie. That was the morning of May 7, I believe.

“Q. Did you have any conversation with him?

“A. No. Let me correct that. I saw Mr. Oslin ashore on May 7th.

“Q. Did you talk to him at that time?

“A. Yes, at that time I talked to him.

“Q. Do you remember what was said at that time?

“A. I told him—I asked him what he was doing ashore. He said, ‘Oh, I’ll make the ship.’

“I said, ‘If you miss the ship, you will be logged as a deserter.’

“Q. Do you recollect the time of day this was?

“A. No, I don’t. I was busy running back and forth to the Naval Supply Depot, and stores.

“Q. At any time during the voyage part of this time had Mr. Oslin ever mentioned anything to you concerning the length of his intended stay aboard the vessel? “A. No, he had not.

“Q. Did he ever ask for mutual consent discharge? “A. He had not.

“Q. Now, referring to Mr. Cooper, the third petitioner in this case, Captain, do you know him?

(Deposition of Morris W. Mote.)

“A. I do.

“Q. When and where?

“A. As a member of the crew of the USNS Escambia from if I remember correctly, August 21, 1956, until May 7, 1957, in the capacity of able seaman.

“Q. What are the general duties of an able seaman, Captain?

“A. Stand watch eight hours a day at sea and in port.

“Q. What are his duties when the vessel is being shifted or moving?

“A. To handle lines, as any other seaman does, or take a trick at the wheel, when and if it is his turn at the wheel.

“Q. When did Mr. Cooper last perform these duties?

“A. To the best of my knowledge on May 7, 1957.

“Q. Was he granted shore leave at that time?

“A. Well, he was granted shore leave at any time he was off watch after the vessel was secure, provided there was no call-back for further shifts.

“Q. Do you know what watch he stood?

“A. I don't remember at that particular time. I believe it was the 4:00 to 8:00.

“Mr. Cooper: 8:00 to 12:00.

“The Witness: 8:00 to 12:00.

“Mr. Haid: Stipulate it was 8:00 to 12:00.

“Mr. Mitchell: Q. Did you have any conversations with Mr. Cooper during your stay in Sasebo?

(Deposition of Morris W. Mote.)

“A. Yes, I saw Mr. Cooper ashore, warned him against missing the ship.

“Q. During the voyage did Mr. Cooper ever make any statement to you concerning his intention as to how long he would be aboard the vessel?

“A. No.

“Q. Did he ever ask for mutual consent discharge? “A. Yes.

“Q. Did you grant the mutual consent discharge?

“A. No. I explained it was impossible.

“Q. Did he make any further remarks after that?

“A. No. During this conversation where I stated that it would be impossible for me to give a mutual consent discharge, I said the only way he could get off would be to get off and desertion was a possibility if he did. He said, well, he wasn't going to do that.

“That conversation took place at sea between Manila and Sasebo, before we got into Sasebo.

“Q. And before arrival in Sasebo at this time?

“A. Yes.

“Q. This voyage. “A. Yes.

“Q. Did Cooper return aboard the vessel on May 8th?

“A. I do not know, of my own knowledge. It was reported to me that he did not.

“Q. Did he have any contact with the vessel on that date?

“A. It was reported to me that he sent a ship-

(Deposition of Morris W. Mote.)

mate aboard to get some money that he had left with his watch partner and bring it ashore to him.”

Mr. Haid: I move to strike that last answer as obviously hearsay.

The Court: “It was reported to me,”—it may go out.

(Mr. Mitchell continued reading from the deposition from page 23, line 25 to and including page 25, line 5, as follows:)

“Q. Who did he send aboard?

“A. I do not know.

“Q. After your sailing from Sasebo did you see any of the three men involved here at any other time? “A. I did not.

“Q. Were you ever in a port where they were, to your knowledge?

“A. I was in Yokohama at the same time Oslin was in Yokohama.

“Q. Did he come aboard the vessel then?

“A. He did not.

“Q. Was he assigned to another vessel at that time?

“A. He was. The Mission Lovetto. It sailed after our vessel sailed, and I was somewhat disappointed that Oslin didn't come aboard and get his clothing and gear that he left aboard.

“Q. Did he make any attempt to? “A. No.

“Q. Prior to your arrival in Sasebo, Captain, was there at any time any incident concerning any of these men during the voyage that would have a bearing upon—strike that.

“Q. Prior to your arrival in Sasebo, Captain,

(Deposition of Morris W. Mote.)

was there any incident during the voyage where any of these men were concerned as to returning to the vessel?

“Mr. Resner: I object to the form of that question. It is unintelligible.

“Mr. Mitchell: Answer the question, Captain.

“A. Oslin and Cooper went ashore in Manila and they were, as far as I know, both ashore without permission; and when they were told to return to the boat landing at a certain hour, it was necessary for me to hold the boat almost an hour to get them back to the ship. And following that incident and the fact that the vessel had been sailing constantly seven men short, I called the union delegates up to my office and gave them a statement and requested that they bring it up at the next meeting of the crew aboard the vessel, to the effect that” * * *

Mr. Resner: If your Honor please, I am going to object to the balance of this answer. What was said to the union delegate outside of the petitioners' hearing is obviously hearsay.

The Court: It may go out.

(Mr. Mitchell continued reading from page 25, line 18, to and including page 26, line 20, as follows:)

“Mr. Mitchell: Q. Captain, in referring to the log on Wednesday—

“Mr. Resner: I move to strike out the answer.

“Mr. Haid: I am going to join in Mr. Resner's objection.

“Mr. Mitchell: Q. Referring to the log on May

(Deposition of Morris W. Mote.)

8th, Captain, you indicated the vessel was at anchor approximately 0745 in the morning and that it came away from anchor about 0910. During that time was there any launch service to the vessel?

"A. No official launch service, no. Whether or not private launches came and went, I don't know.

"Q. Was there any regular launch service set up by you or by your agency ashore?

"A. Yes, while the vessel was docked; not in that short stay at anchorage, no.

"Q. You say while the vessel was docked?

"A. Yes.

"Q. Did you have launch service to your dock?

"A. That was necessary because of these oil installations, men could not come to the vessel—to go to the installation they had to come by launch.

"Mr. Haid: What dock are we talking about?

"Mr. Mitchell: This was the last one, the one they sailed from.

"The Witness: These conditions are true of all docks.

"Mr. Mitchell: I don't recall the name of this dock. That's all of my questions for now. You may cross examine."

Mr. Resner: Wait a minute. This is my cross examination, if your Honor please, and I waive it.

Mr. Mitchell: We would submit that it should be introduced into evidence, your Honor.

Mr. Resner: I don't have to read my cross examination. I waive it.

Mr. Haid: The same applies, if your Honor

(Deposition of Morris W. Mote.)

please, with regard to my cross examination of the witness. I waive it also.

Mr. Mitchell: If part of a deposition is introduced in evidence, your Honor, I think it all should be introduced.

Mr. Resner: That is not true.

Mr. Haid: This is our cross examination.

The Court: There may be admissions or something developed on cross examination that inured to the benefit of the Government. Have you anything in mind in that respect?

Mr. Mitchell: Yes, your Honor, there are some statements in there. I feel it should all go in.

The Court: Well, what are they? Advise the Court.

Mr. Mitchell: There is a discussion of pensions aboard the vessel; a discussion of the captain's interpretation of desertion, whether intent is necessary and how he establishes intent in his mind. It is all in here in the cross examination.

The Court: Very well. We will let it go in.

We will take a recess.

(Recess.)

Mr. Mitchell: Shall I continue, your Honor?

The Court: Continue.

(Mr. Mitchell thereupon continued reading from the deposition from page 26, line 20 to and including page 28, line 7, as follows:)

“Cross Examination

“By Mr. Resner: Q. Captain Mote, how many

(Deposition of Morris W. Mote.)

times have you made this run out to the Far East, this type of run?

“A. That’s a hard question to answer. I have been at it continuously for the past ten years.

“Q. I understand.

“A. With few exceptions.

“Q. And at ports in the Persian Gulf where you take aboard cargo, shore leave is not allowed?

“A. That’s true.

“Q. I mean, apparently the Asian countries or principalities, whatever they are, have objections to the—don’t allow seamen ashore?

“A. That’s correct.

“Q. So that the only shore leave that crew members are afforded are at the ports in Manila and Formosa, Korea and Japan, on that leg of the voyage?

“A. That’s correct.

“Q. And how long is the run between the Gulf and these Far Eastern ports, as far as days are concerned?

“A. Sixteen to eighteen days each way.

“Q. When you once get out there from the West Coast, it then becomes a continuous shuttle between the Gulf and these ports in the Far East?

“A. That’s correct.

“Q. I understand this is regarded as a very difficult job for both master, officers and crew, because of the fact of the restrictions upon shore leave and the fact that you are out for a long time and away from home, is that true? “A. That is true.

“Q. I understand that many tensions build up

(Deposition of Morris W. Mote.)

on the ship between the crew members and between the crew members and the officers, is that true?

"A. Not any more than they build up in any group of men that are held together a long period of time.

"Q. Now, perhaps my question isn't as intelligible as it should be. On the usual cargo run, let's say between here and the Far East, a ship will, say, dock in the Hawaiian Islands and then maybe go down to Australia or the South Pacific and then to ports in Asia, and, wherever the ship goes, why, the men are afforded shore leave; that's true, isn't it?

"A. That's true."

Mr. Resner: May I offer an objection, your Honor, at this point?

The Court: Very well. [45]

Mr. Resner: I am sorry to be late; I went down to pick up a book.

If your Honor feels that Mr. Mitchell can read the cross examination which I have waived, I feel that for the purpose of the cross examination he has made the captain his own witness on cross examination. In other words, it is just the same as direct. I think the rules so provide.

The Court: Read the rule.

Mr. Resner: I am a bit out of breath. Of course there isn't anything in the Supreme Court Admiralty Rules about depositions so we have to go to the Federal Rules of Civil Procedure for analogy to determine that particular point.

Rule 26(f): "The effect of taking or using a deposition. A party shall not be deemed to make a

(Deposition of Morris W. Mote.)

person his own witness for any purpose by taking his deposition. The introduction in evidence of the deposition or any part thereof for any purpose other than that of contradicting or impeaching the deponent makes the deponent the witness of the party introducing the deposition; but this shall not apply to the use by an adverse party of a deposition. At the trial or hearing any party may rebut any relevant testimony contained in a deposition whether introduced by him or any other party."

And inasmuch as we have waived it and they are using it, I would say that this makes Captain Mote for all purposes on the entire testimony their witness. [46] Would your Honor like to see the rule?

Mr. Mitchell: I would disagree with that, your Honor. Admiralty Rule 13 of the Rules of Practice of this court, states:

"If only part of an admissible deposition is offered into evidence by a party, any other party may require him to introduce all of it which is relevant to the part introduced."

Mr. Haid: Well, we are not requiring Mr. Mitchell to introduce anything. We are asking that it be specifically not introduced. We are not requiring him to do anything. He is doing it on his own; that is the whole point of this.

Mr. Resner: Your Honor, if he wants to use part of it, we can compel him to use it all, but he can't compel us to use any of it. He took the deposition; we didn't. In other words, it is his witness, not ours—the same thing as if we had Captain

(Deposition of Morris W. Mote.)

Mote in court here, your Honor, and Mr. Mitchell had finished asking him a lot of questions, we wouldn't be compelled to ask him a single question if we didn't want to.

Mr. Haid: We could just say we waive cross examination.

Mr. Resner: And that is what we are doing here.

Mr. Mitchell: That is true, your Honor, but they have already cross examined the man and it is part of the deposition, part of the evidence in this case.

Mr. Resner: If they want to use it. He is their witness; that is exactly the point. We don't want to use it.

Mr. Haid: We have decided it isn't worth while.

The Court: How many pages is it?

Mr. Mitchell: Thirty more, your Honor, of the cross examination. There is quite a bit of relevant material in here, your Honor; we feel it should be in the case.

The Court: For the purpose of disposing of this matter, indicate the important things that you have in mind in relation to it?

Mr. Resner: May I ask a question, your Honor?

The Court: Yes, certainly.

Mr. Resner: What is your Honor's disposition as to our contention that what he might use is on his case and not on ours? In other words, it is the same as direct examination, not cross examination. Does your Honor follow me on that point?

The Court: Not clearly.

Mr. Resner: Usually, of course, no one is bound by cross examination. In this case, since we have

(Deposition of Morris W. Mote.)

waived our cross examination, we feel that if it is used to any extent Mr. Mitchell is using that as testimony on his own case the same as direct examination. We wouldn't be bound by it under any circumstances, and if he wants to use it, and if your Honor feels he can, it is in connection with his case in chief and his direct testimony. That is our point.

The Court: I just wanted to know what there was in this examination that he had in mind that would be beneficial to the Government. [48]

Mr. Mitchell: As I stated before, your Honor, the discussions of the master interpretation of what desertion includes or what is desertion.

The Court: I will be able to define that without any difficulty. The objection will be sustained.

Mr. Mitchell: There are also other entries in it concerning, for instance, the mutual consent discharge asked by Mr. Cooper which is very relevant to the case.

The Court: The Court has ruled. I sustain the objection.

Mr. Haid: That was asked and answered on direct examination. It has all been covered.

Mr. Mitchell: Shall I proceed with the redirect?

Mr. Resner: Page 49.

(Mr. Mitchell thereupon read from the deposition from page 49, line 16 to and including page 56, line 9, as follows:)

“Mr. Mitchell: Q. Captain, in regard to these desertions, who preferred the charge of desertion against them? “A. I did.

(Deposition of Morris W. Mote.)

“Q. You, officially? “A. Yes.

“Q. Was there any witness?

“A. The witness to the entry in the log book, whose signature is opposite mine in the official log.

“Q. In such a case, what is he a witness to?

“A. A witness to the log entry.

“Q. Do you recall who it was, in this instance—these instances?

“A. To the best of my knowledge it was the chief officer, Mr. Wheeler.

“Q. Captain, when a man misses a vessel, at what time do you prepare his accounts, or conclude them? “A. At what time?

“Q. Following his missing the vessel.

“A. Sometime between the time the man misses the vessel and the next port.

“Q. And the next port? “A. Yes.

“Q. Captain, you said that you had spent ten years' service in these vessels, in answer to a question of Mr. Resner's. What are the normal articles that are signed on this type of a voyage?

“A. Articles for one voyage from a port—in this instance, Los Angeles—to port or ports to the westward of the Pacific Coast of the United States, or to a specific port, and such other ports as the vessel may be directed by the U. S. Government, or any agency thereof, and return to the Pacific Coast, to the port of final discharge on the Pacific Coast of the United States, for a period of not to exceed 12 months.

“Q. In your experience, has that been the type

(Deposition of Morris W. Mote.)

of articles that have been signed on all of these voyages? "A. Yes.

Q. "At the time of signing on a vessel are the seamen informed of the length of the voyage intended?

"A. It's required by law that the shipping commissioner read the articles to the seaman before he signs the articles, to make sure he understands them.

"Q. Does such a reading include the length of the voyage? "A. It does.

"Q. Captain, how many men are required for shifting the ship at any time in port, moving from dock to dock or dock to anchorage, or such as that?

"A. All of the deck department is expected to be on board. It is their duty to be on board. And enough men in the engine room to run the machinery. Officers. Master.

"Q. Referring back to Mr. Oslin, did he perform any duties on May 7th, to your recollection?

"A. I believe he did, yes. Moored the vessel.

"Q. In such a case, when should Mr. Oslin have returned to the vessel if he had been granted shore leave?

"A. He should have been aboard the vessel at eight o'clock the morning of May 8th.

"Q. At eight o'clock, Captain? "A. Yes.

"Q. I think you read us a sailing board entry or posting for 1400 on the 8th, and for a shift for 7:00 a.m. on the 8th.

"A. 7:00 a.m. on the 8th. Well, in that event he

(Deposition of Morris W. Mote.)

should have been aboard at 7:00 a.m. on the 8th.

“Q. In other words, he was——

“A. He should have been aboard it to shift the vessel.

“Q. He was necessary to shift the vessel?

“A. Yes.

“Q. He would then also be necessary, of course, to dock it again?

“A. To do his work from 8:00 to 5:00.

“Q. Do you recall what time Mr. Staples asked to be relieved?

“A. I do not. I don't know what time he asked to be relieved, nor what time he was relieved. I know it was before cargo was out.

“Q. Do you recall when Mr. Cooper last performed his duties?

“A. To the best of my—so far as I know, from 8:00 to 12:00 at night on May 7th. He either performed his duties or made arrangements with someone else to perform them. But as far as I know his duties were performed.

“Q. When should he have been aboard on May 8th? “A. Eight o'clock in the morning.

“Q. I might call your attention again that the board was posted for shift at 7:00.

“A. He should have been aboard for his watch at 8:00, and the shift at 7:00.

“Q. His duties also called for him to share in shifting the vessel? “A. Yes.

“Q. Captain, in answering a question of Mr. Resner's, you mentioned letters received concern-

(Deposition of Morris W. Mote.)

ing, 'Why stay aboard the vessel?' Could you elaborate on that?

"A. On the previous voyage the steward and one other man had missed the ship; had written letters to crew members telling how fast they got home and how easy it was. Now, I can't say to whom those letters were written. I know that they were common; that I saw one of them myself.

"Q. Now, you say on the previous voyage. Is that—

"A. The previous time in Sasebo.

"Q. In Sasebo? "A. March the 25th.

"Q. That was still in the course of these articles?

"A. Of the long voyage. Yes, still in the course of these articles on the long voyage.

"Q. In response to questioning by Mr. Haid you indicated that the men had three hours to be aboard after this time that word was passed to them, or—

"A. No; after the time they were supposed to be on board, the vessel did not sail until three hours after the time they were supposed to be on board.

"Q. That is what I wanted to bring out, Captain. That three hours you talk about, then—

"A. The sailing board was posted for 1600. They are supposed to be on board one hour before sailing. The vessel sailed at 1806.

"Q. That is the three hours you referred to in answer to that question? "A. Yes.

"Q. I see. Now, when Mr. Cooper asked you for

(Deposition of Morris W. Mote.)

a mutual consent discharge did he give a reason for asking that? "A. No.

"Q. Did he offer any reason or exense that would support a mutual consent discharge?

"A. No.

"Q. What was the occasion of his asking for one? Was it in your office?

"A. No, it was on the wing of the bridge. One morning he called me out and asked me if it would be possible to get a mutual consent discharge.

"Q. Now, in reference to the launches, or the boat service to the vessel, how many boats per day were arranged for by the company?

"A. Four boats a day.

"Q. What times were those?

"A. I don't recall exactly. I know that the last one was always arranged to leave shore at 2300. There was one, I believe, that left shore at 1700 and left the ship at 1800, and one around noon, and one in the early morning. The first boat out to the vessel was usually at 0600 from shore, 0700 from ship.

"Now, those times were varied to meet circumstances. If the vessel was due to shift—like, for instance, the sailing board was posted for 1600, the last official boat was at 1500 that day.

"Q. Then one hour before sailing there would be a launch? "A. Yes.

"Q. That is what you are saying?

"A. Yes.

"Q. Was that service regular?

(Deposition of Morris W. Mote.)

“A. Yes. It was regular except for variations due to operational requirements.

“Q. There was a schedule of that service posted on the vessel?

“A. Posted on the vessel, posted on the bulletin board at the gangway, and in Suzy’s Bar.

“I recall an answer to one of your questions, Mr. Haid, if you would like it. There was one man who missed the ship after this incident.

“Mr. Haid: Q. Did you log him for desertion?

“A. No. I was confident there was no intent to desert. He missed the ship in Honolulu a few days before the ship was due home.

“Mr. Mitchell: Q. Prior to your arrival in Sasebo, Captain, had any of these three men been late, or ashore, beyond the time posted for sailing?

“A. Yes.

“Q. Could you name which ones had been?

“A. To the best of my recollection all three of them had been.

“Q. Had this occurred more than once?

“A. Yes.

“Mr. Mitchell: I think that is all, Mr. Haid.

“Recross Examination by Mr. Haid”

Mr. Haid: I waive it.

Mr. Mitchell: That completes that deposition, your Honor.

Shall I proceed with another one?

The Court: Yes.

Mr. Mitchell: These next depositions, your Honor, were taken in Los Angeles, and at Mr.

Resner's request were separated into three separate and distinct depositions.

Mr. Resner: They weren't separated at my request. The young man in the U. S. Attorney's office down there didn't know quite what to do. He didn't have instructions from San Francisco. [49] In Los Angeles they need instructions from San Francisco; up here they need instructions from Washington. The young boy didn't know what to do so he decided to take three of them. I had nothing to do with that.

Mr. Mitchell: In the matter of the petition of James P. Staples for an order setting aside forfeiture of his wages, in Admiralty No. 20,954, deposition of Edward L. Wheeler, Wednesday, September 18, 1957, Room 601, United States Post Office, Court House Building, Los Angeles, California.

(Mr. Mitchell thereupon read from the deposition of Edward L. Wheeler commencing on page 1, to and including page 8, line 22, as follows:)

“Appearances: For the Respondent United States of America: Lloyd H. Burke, United States Attorney, Keith R. Ferguson, Special Assistant to the Attorney General, Jerry W. Mitchell, Attorney, Department of Justice, Room 447-A Post Office Building, San Francisco 1, California, by: Norman R. Atkins, Appearing. For the Petitioners James P. Staples and Richard C. Cooper: Roos, Jennings & Haid, San Francisco, California, law offices of Bodle & Fogel, 458 South Spring Street, Los Angeles 13, California, by: Charles H. Warren.

(Deposition for E. L. Wheeler.)

“Mr. Atkins: Pursuant to notice, this deposition of Edward L. Wheeler, a witness for the Respondent, is being taken de bene esse before a Notary Public authorized to administer oaths at 600 Federal Building, Los Angeles, California, at the office of the United States Attorney on the 18th day of September, 1957, commencing at the hour of 4:10 p.m., and continuing thereafter from day to day until completed. And may it be stipulated that all objections except as to the form of the questions propounded and to the responsiveness of the answer shall be reserved for each of the parties until the time of trial, and that the reading, signing, and sealing of the deposition by the witness is waived, and the deposition shall have the same force and effect as though signed and sealed?”

“Mr. Warren: I will stipulate to all of that except as to objections as to responsiveness of the answers are concerned. I will stipulate that all objections are reserved except as to the form of the question.

“Mr. Atkins: As stated, then?”

“Mr. Warren: No, not as stated. As I stated it.

“Mr. Atkins: In other words, you are reserving responsiveness objections as well as all others, so the only objection that is not reserved is as to the form of the question, is that correct?”

“Mr. Warren: That is correct.

“Mr. Atkins: So stipulated. May it be further stipulated that this deposition will be reported by Frank O. Nelson, Certified Shorthand Reporter, and a disinterested person, and thereafter tran-

(Deposition for E. L. Wheeler.)

scribed by him in typewriting, the original to be forwarded under the seal of the Notary Public to the Clerk of the United States District Court for the Northern District of California?

“Mr. Warren: Yes, so stipulated.

“E. L. WHEELER

a witness herein, called as a witness by the Respondent, having been previously duly sworn by the Notary Public, was examined and testified as follows:

“Direct Examination

“Q. What is your name?

“A. E. L. Wheeler.

“Q. And your address?

“A. 5212 Beeman Avenue, North Hollywood.

“Q. And your Z number?

“A. Z296093.

“Q. What is your occupation?

“A. Merchant seaman.

“Q. Did you ever serve on the USNS Escambia?

“A. Yes, sir, I did.

“Q. When?

“A. Approximately September of 1956 to September of 1957.

“Q. In what capacity did you serve aboard the USNS Escambia during those dates?

“A. Chief Mate.

“Q. What is a Chief Mate?

“A. Chief Mate is second in command of the vessel.

(Deposition of E. L. Wheeler.)

“Q. And, generally, what are his duties?

“A. Generally, in charge of the deck department, maintenance of the deck department, the cargo, the cargo movement, the keeping of the crew personnel records, wages, and overtime.

“Q. Directing your attention to May 5th, 1957, do you recall what port you were in?

“A. We were in Sasebo, Japan.

“Q. What date did you arrive?

“A. We arrived Saturday, May 4th.

“Q. When did you depart for sea?

“A. We departed for sea May 8th.

“Q. What were the activities of the *Escambia* while in Sasebo?

“A. We discharged a cargo of jet fuel.

“Q. What date was that?

“A. That was May 4th.

“Q. What did you do then?

“A. We layed alongside of the dock until the next day.

“Q. Which was?

“A. Wait a minute, now. I am sorry. We discharged the ship May 4th through May 5th. We finished the discharge May 5th.

“Q. What did you do then?

“A. We layed there at the dock overnight and the next day went out to sea to clean tanks preparatory to back loading.

“Q. Where did you go after you cleaned tanks?

“A. We returned to the Port of Sasebo.

“Q. And what did you do then?

(Deposition of E. L. Wheeler.)

“A. We back loaded another cargo.

“Q. What date was that?

“A. We back loaded the cargo May 8th.

“Q. What time of day did you sortie for the tank cleaning?

“A. I am sorry, I didn't hear you.

“Q. What time of day did you sortie for tank cleaning? I believe the date you gave was——

“(Discussion held off the record.)

“Mr. Atkins: Withdraw the question.

“Q. What was the date that you sortied for tank cleaning?

“A. Monday, May 6th.

“Q. What time did you sortie?

“A. The last line in was 0820.

“Q. What was the time of return, date of return, after tank cleaning?

“A. Tuesday, May 7th.

“Q. What time was that, do you remember?

“A. 0800 we were all fast.

“Mr. Atkins: Off the record.

“(Discussion held off the record.)

“Mr. Atkins: (Continuing) All right, on the record.

“Q. Were there any other movements in Sasebo Harbor during May 4th to May 8th?

“A. Yes. We docked May 7th at this one dock. We took a part load and we lay overnight at the dock. That was the time we posted the sailing board for 7:00 o'clock, a 7:00 o'clock shift the next morning. The next morning we shifted to anchorage and

(Deposition of E. L. Wheeler.)

then from anchorage we went to the second loading dock. That was May 8th. And that loading dock, from that loading dock we proceeded to sea.

“Q. What time was that?

“A. The last line was off the dock at 1716.

“Q. You stated that you sortied for tank cleaning. What is tank cleaning?

“A. Tank cleaning is to flush both the lines and wash down the sides of the tank to take out the previous residue of the cargo and to allow you to load a different commodity without contamination of cargo.

“Q. Is there another word for tank cleaning?

“A. It is commonly called Butterworthing.

“Q. Will you describe the procedure for Butterworthing?

“A. In Butterworthing you use a high pressure hose with twin nozzles attached that are universally mounted so that they rotate. These hoses are lowered into the tank through opening provided for it and, as the water is put in under pressure and temperature, it directs streams against the sides of the tank working it down to the bottom of the tank where it is taken out by the ship's pumps and discharged into the sea as slops.

“Q. Do you know one James P. Staples?

“A. Yes, sir; I do.

“Q. How did you come to know him?

“A. He was originally signed on the vessel as assistant pump man, or second pump man, and when the other pump man was taken off because of

(Deposition of E. L. Wheeler.)

illness early in the voyage, he was promoted to chief pump man.

“Q. Was he a part of the crew during this voyage?

“A. He was a part of the crew during the voyage.

“Q. What were his duties while the vessel loaded and unloaded?

“A. While the vessel was loading he had no duties relative to the deck department. But, while the ship was discharging or tank cleaning operations, his duties were operating the ship's cargo pumps.

“Q. Who was Staples' immediate superior officer?

“A. Staples is officially a member of the engine department, and his immediate superior would probably be the Chief Engineer. During cargo operations, I was his immediate superior.

“Q. Who was the Chief Engineer during the voyage?

“A. The Chief Engineer's name was Nicky Schubkegel. We called him Nick.

“Q. What duties did Staples have during Butterworth operations?

“A. During Butterworth operations his duties were pumping the slops residue from the bottoms of the tanks as it came in through these Butterworth machines and discharging it through the pipe lines system into the sea.

(Deposition of E. L. Wheeler.)

“Q. Was Staples present during the Butterworth operations in Sasebo?”

“A. Staples was——

“Q. Between May 4th and May 8th of 1957?”

“A. Staples was absent without leave during that period.”

Mr. Haid: If your Honor please, I move to strike that answer. It has already been established earlier that Staples was a member of the engine room and his immediate superior would be the chief engineer. This question was directed to the chief mate. It would be purely something that would be beyond his knowledge and he was absent without leave.

Mr. Mitchell: Your Honor, in answer to the question as to who his immediate superior was a part of the answer was, “during cargo operations I was his immediate superior.” That is the way the chief officer answered the question.

Mr. Haid: This question concerned the tank cleaning operations, not cargo operations. His immediate superior during tank cleaning operations would be the chief engineer, not the [50] chief mate. The question was: “Was he present during butterworth operations?” Which is tank cleaning. The answer was that he was absent without leave. The chief mate wouldn't know.

The Court: I don't see how that is going to enter into the merits of this case, proceed.

Mr. Haid: It doesn't make much difference.

(Deposition of E. L. Wheeler.)

(Mr. Mitchell continued reading from page 8 line 23, to and including page 14, line 4, as follows):

“Q. How do you know he was absent?

“A. Because I had to run the cargo pumps myself.

“Q. When was that?

“A. During the Butterworth operations and during part of the discharge after we had arrived.

“Q. What date was that? On what date did you have to do his job?

“A. On May 5th the Chief Engineer came to me and requested that he be allowed to relieve Staples to finish the discharge so Staples could get some shore time. At that time I think I recall that I told Staples that I wanted him back for the Butterworth operations. I didn't see him again.

“Q. He was not present, then, during the Butterworth operations?

“A. He wasn't present from that time on. That was the last time I saw him, Sunday, May 5th.

“Q. Did Staples ever complain about the food aboard?

“A. Staples never complained about the food.

“Q. Did he ever complain about the living conditions?

“A. He did not complain about the living conditions.

“Q. His job?

“A. He complained, he was a chronic com-

(Deposition of E. L. Wheeler.)

plainer, as far as his job was concerned. He felt that he was overworked.

“Q. Did he ever complain of illness?

“A. Outside of perhaps a headache after long hours, no.

“Q. Did Staples ever ask you for a mutual consent discharge?

“A. No, sir, he did not.

“Q. Did Staples ever tell you that he intended to desert the ship?

“A. No, sir, he did not.

“Q. Did the ship provide launch service for the crew to go from the ship to shore and back again?

“A. Yes, sir. It is standard procedure at all ports where liberty is allowed.

“Q. Was that procedure followed in Sasebo?

“A. Yes, sir, it was.

“Q. How many runs a day did the launches make in Sasebo between May 4th and May 8th, 1957?

“A. To the best of my recollection, there were two scheduled boats in the morning and two in the afternoon or evening period. That would be four.

“Q. Are ships' movements posted?

“A. Ships' movements are posted on what is known as a sailing board, a blackboard that is posted near the gangway to inform the crew as to the time they must be on board for various shifts or departure of the vessel.

“Q. To your own personal knowledge, was the

(Deposition of E. L. Wheeler.)

blackboard posted accurately for all movements during the period of May 4th to May 8th?

“A. I am positive it was.

“Mr. Warren: Well, I will object to the form of the question as assuming a fact not in evidence.

“A. Do you want me to explain about the sailing board?

“Mr. Atkins: Just answer the questions. I will ask them.

“Q. Was notice posted at any other place regarding the ship's movements besides on this blackboard by the gangway?

“A. In these two bars that were mentioned previously, Suzies Bar and one other.

“Q. Where are those bars located?

“A. Those bars are in the harbor area in Sasebo, near where the shore boats leave from.

“Q. Ships' movements are posted in those bars?

“A. It has been a practice that the latest man ashore usually writes on the blackboard what is going to happen to the ship.

“Q. When did you first learn that Staples was not aboard?

“A. Sunday, May 5th, at 1415. I had to start ballasting the ship to go to sea for the Butterworth operations.

“Q. Was he required to be aboard at that time?

“A. To ballast the ship, those were his duties.

“Q. He was not present for those duties?

“A. No, sir. I ballasted the ship myself.

“Q. What is meant by ballasting a ship?

(Deposition of E. L. Wheeler.)

“A. It is flooding the tanks with sea water to give the ship stability when she is in an unloaded condition.

“Q. Did Staples ever ask you for permission to remain away during the period during which he was away from the ship?

“A. He asked me for time off and I told him that I needed him.

“Q. You did not give him permission to remain away from the ship?

“A. I gave him permission Sunday, May 5th, to allow the Chief Engineer to finish discharging the vessel because the Chief Engineer came to me and requested this.

“Q. What period, then, was he ashore with permission?

“A. Well, he left at that time. The sailing board was posted for 0700 Monday, May 6th. So you might say he had permission to be ashore until 6:00 o'clock Monday morning, May 6th. He was not entitled to that. I gave it to him.

“Q. Was a search ever made of Staples' room?

“A. Yes, sir.

“Q. When?

“A. The departure from Sasebo, that would be either May 8th or May 9th, he was reported as missing May 8th, of course, but the search—well, the search was made May 8th, yes, sir.

“Q. Was his personal gear aboard?

“A. His personal gear was packed the following day by members of the engine department.

(Deposition of E. L. Wheeler.)

“Q. Do you know whether all of his personal gear was aboard?

“A. I do not know, sir.

“Q. Who gives permission to members of the crew to go ashore?

“A. Normally in ports where shore leave is not restricted, or where a crew is not held to the vessel for various reasons, on their off hours they are allowed to go ashore without specific permission.

“Q. And when are they required to be back under those circumstances?

“A. When it is time to report for their watch, if they are watch standers; at 8:00 o'clock in the morning if they are day men; or at any time that a notice is posted that they shall be back on the sailing board.

“Q. What type of Seamen was Staples?

“Mr. Warren: By that you mean his rating?

“Q. (By Mr. Atkins): By that I mean was he a day man, or a watch stander, or what?

“A. Well, at sea the pump man works from the hours of 8:00 to 5:00 as a day man. During cargo operations he works all the way through until the cargo is out of the ship. He is compensated in excess of eight hours at the overtime rate. His responsibility is to pump the vessel.

“Mr. Atkins: No further questions at this time.

“Cross Examination

“By Mr. Warren:”

Mr. Haid: Pardon me, your Honor.

(Deposition of E. L. Wheeler.)

Mr. Resner: May we have a minute?

Mr. Haid: Cross examination is waived.

Mr. Mitchell: Shall I proceed with the redirect, your Honor?

(Mr. Mitchell thereupon continued reading from page 30, line 9, to and including page 34, line 14, as follows):

“Redirect Examination

“Q. (By Mr. Atkins): Captain, you stated that on June 17th you put into Yokohama?

“A. Yes, sir.

“Q. Was there any other port that you put into between May 8th and June 17th, 1957?

“A. Yes, sir, Manila; Manila and Bahrein in the Persian Gulf.

“Q. Those two ports were between May 8th and June 17th?

“A. That is correct, sir.

“Q. Would there be any way of the crew knowing that you would be back in Yokohama on June 17th?

“A. As I said, some of the girls that hang around the waterfront keep pretty close track of these ship movements. It would be possible that the crew would know you would be back there, although our usual port was Sasebo. This was the first and only time we came into Yokohama.

“Q. Where a Seaman misses his ship sailing what steps would he take to rejoin the vessel at some other time?

(Deposition of E. L. Wheeler.)

“A. Well, on a run like this particular run he has two alternatives: To hide out until his money runs out, which they usually do, and then they turn themselves in to Immigration authorities; or try to pay their own way home immediately. I don't think it could be arranged that they could rejoin the ship because of the time we would be gone on a round-trip. In other words, when they are turned into the pool they have no choice as to what ship they go onto. The pool more or less sends them onto a ship in order of first in first out.

“Q. You stated that there was a conversation which took place on the deck of the USNS Escambia between yourself, the Chief Engineer, and Staples? “A. That is correct, sir.

“Q. You also stated at that time you granted permission for Staples to leave the ship?

“A. That is correct, sir.

“Q. You also stated that there was a notice posted on the board at the head of the gangway?

“A. Yes, sir.

“Q. What was it, what did the notice state, to the best of your knowledge?

“A. The notice was originally posted at 1400, May 4th, that ‘Vessel shifts at 0900 tomorrow.’ At 1000, Sunday, May 5th, the notice on the board was changed to ‘0700 Monday, May 6th, vessel shifts.’

“Q. Was that the status of the board at the time that Staples left the ship?

“A. That was the status of the board at the time Staples left the ship, which was 0700 Monday, May 6th.

(Deposition of E. L. Wheeler.)

Mr. Resner: May we have a minute?

Mr. Haid: Cross examination is waived.

Mr. Mitchell: Shall I proceed with the redirect, your Honor?

(Mr. Mitchell thereupon continued reading from page 30, line 9, to and including page 34, line 14, as follows):

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“A. That is correct, sir.

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“A. As I said, some of the girls that hang around the waterfront keep pretty close track of these ship movements. It would be possible that the crew would know you would be back there, although our usual port was Sasebo. This was the first and only time we came into Yokohama.

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(Deposition of E. L. Wheeler.)

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“A. That is correct, sir.

“Q. You also stated that there was a notice posted on the board at the head of the gangway?

“A. Yes, sir.

“Q. What was it, what did the notice state, to the best of your knowledge?

“A. The notice was originally posted at 1400, May 4th, that ‘Vessel shifts at 0900 tomorrow.’ At 1000, Sunday, May 5th, the notice on the board was changed to ‘0700 Monday, May 6th, vessel shifts.’

“Q. Was that the status of the board at the time that Staples left the ship?

“A. That was the status of the board at the time Staples left the ship, which was 0700 Monday, May 6th.

(Deposition of E. L. Wheeler.)

“Mr. Warren: From what book are you getting that information, Captain? I notice that throughout the taking of your testimony you have referred to a book from time to time from which you have read various answers to questions propounded. Is that the official log?

“A. That is a bound volume which I keep for my necessary information that I must have for my paper work that is commonly referred to in the seafaring trade as the Mate’s log.

“Mr. Warren: Now, when you say you are required to keep that, is that by shipping regulations?

“A. No, there is no such law. I didn’t say I was required. I said I keep it for my own personal use.

“Mr. Warren: I see.

“A. I am required in the sense that without it I would have my paper work increased.

“Mr. Warren: So, when you testified as to the dates of arrival, departures, and numerous activities of the ship in question, and particularly about the wording on sailing board, you are testifying from that book, is that correct?

“A. These particular entries that I made are abstracts from the rough log. I made both entries, wrote it in the rough log and in this book.

“Mr. Warren: But, I mean with respect to your testimony today——

“A. With respect to my testimony today——

“Mr. Warren: ——as to those matters, you are refreshing it with that book, is that right?

(Deposition of E. L. Wheeler.)

“A. I am refreshing my memory with this book, yes, sir.

“Q. (By Mr. Atkins): Now, what type of book is this? Is it a bound book?

“A. It is a bound, standard record book, ledger.

“Q. Is it consecutively numbered, the pages?

“A. The pages are consecutively numbered, sir.

“Q. When do you make entries in this book in relation to the time when the events occur?

“A. While they are still fresh in my mind, as soon as feasible and my other duties don't interfere with the entry.

“Q. What is the longest time that has elapsed between an event and the recording of it in that book that you have?

“A. Shouldn't exceed an hour, as normal practice.

“Q. In the taking of this deposition regarding Staples have you testified by reading from that book, or by use of it to refresh your present recollection?

“A. The majority of this I refreshed my present recollection. On the writing of the sailing board it was an exact quotation.

“Mr. Atkins: Have the reporter mark that, your book, as Exhibit A.

“(Whereupon the book referred to was marked as Exhibit A for identification by the Notary Public.)

“Q. (By Mr. Atkins): (Continuing) What page of the book do you quote from, Captain?

(Deposition of E. L. Wheeler.)

“A. In regard to this preceding testimony concerning the sailing board, I quoted from page number 50 of the book.

“Mr. Atkins: No further questions.”

Mr. Haid: Further cross examination is waived.

Mr. Mitchell: That completes that deposition, your Honor.

Shall I proceed, your Honor?

The Court: Is that all the depositions?

Mr. Mitchell: There are two more, your Honor.

The Court: You indicated you wanted a continuance in this case this morning. Do you still want one?

Mr. Mitchell: If we could have a continuance until Monday, your Honor, in order to produce the Shipping Commissioner that actually received these official log books from the vessel. [51]

Mr. Resner: I am going to object, your Honor. This is a summary proceeding. Judge Carter told Mr. Mitchell not once but three separate times that this is a summary proceeding, he didn't want to keep putting it over. After all, these seamen's wages are on deposit in the registry of this Court, and he merely was being kind enough to the Government to let them have this much time.

The Court: It may remain there before we get through.

Mr. Resner: It is still a summary proceeding.

The Court: You keep in mind this fact: this is Friday afternoon and I have been sitting here in

this chair continuously every hour during the week, and I was just going to think of myself a little bit.

Mr. Resner: I would have no objection to that.

The Court: Aside from the fact that I think counsel is acting in good faith, and if you found yourself in the same position that he is, I would be equally charitable.

Mr. Resner: I don't think they can get that log book in under any circumstances.

The Court: I am not going to preclude them from an opportunity of trying.

Mr. Resner: Well, your Honor is very charitable.

The Court: No; I try to do the best I can under difficulties from time to time.

You will be prepared Monday morning at 10:00 o'clock? [52]

Mr. Mitchell: We will attempt to if we can reach this man.

The Court: Well, keep in mind that will be your last chance.

Mr. Mitchell: Yes, your Honor.

The Court: These men are here and they are entitled to their day in Court. They are ready and willing, I take it, to go to work whenever they can.

Mr. Resner: Yes, sir.

The Court: And since they have nothing in the world but a job, I don't want to interfere with it.

Mr. Mitchell: Yes, your Honor.

The Court: We will take an adjournment until 10:00 o'clock Monday morning.

Mr. Mitchell: Thank you, sir.

Mr. Resner: Thank you.

(Thereupon the further hearing of this case was continued until Monday, September 30, 1957, at 10:00 o'clock, a.m.) [53]

Monday, September 30, 1957, 10:00 o'clock a.m.

The Clerk: Petition for wages of James Staples, Oslin and Cooper.

Mr. Resner: Ready.

Mr. Mitchell: Ready.

Mr. Haid: Ready.

The Court: You may proceed.

Mr. Mitchell: At this time may the United States proceed by putting on a witness to identify the log book?

The Court: Proceed.

Mr. Mitchell: Will the Court call Joseph Narracci.

JOSEPH NARRACCI

called as a witness on behalf of the Respondent, after being duly sworn, testified as follows:

The Court: Your full name please?

A. Joseph Narracci.

Q. And where do you live?

A. Mountain View: 374 Faye Way, Mountain View, California.

Q. And your business or occupation?

A. I am chief yeoman, United States Coast Guard.

Q. Yeoman? A. That's right, sir.

Q. And how long have you been so engaged?

(Testimony of Joseph Narracci.)

A. In the Coast Guard about 17 and a half years, sir—16 and a half years. [54]

Q. Briefly, what do you do in relation to your activities?

A. Right at the present time I am assigned to the Merchant Marine Inspection office in San Francisco, which is a part of the Coast Guard, and I am in the Shipping Commissioner's office. I am assigned as deputy shipping commissioner for the United States Coast Guard.

The Court: Take the witness.

Direct Examination

Q. (By Mr. Mitchell): May I have that document you have?

A. (Document handed to counsel.)

Mr. Mitchell: I would like to have this marked for identification?

The Court: What is it?

Mr. Mitchell: It is an official log book, your Honor.

The Court: Let it be admitted and entered and marked for the purpose of identification.

The Clerk: Respondent's Exhibit B marked for identification.

(The log book was thereupon marked Respondent's Exhibit B for identification.)

[See pages 159-163.]

Mr. Resner: May we inspect this document, your Honor?

(Testimony of Joseph Narracci.)

The Court: You may.

Mr. Meadows: Your Honor, at this time may the record show my appearance in assistance of Mr. Mitchell—John Meadows of the Shipping Section.

The Court: What is your name? [55]

Mr. Meadows: John Meadows, sir, with Captain Ferguson, and I am assisting Mr. Mitchell in this case.

The Court: You are an attorney, are you?

Mr. Meadows: Yes, sir.

The Court: Let the record so show.

Mr. Resner: Thank you, your Honor.

Q. (By Mr. Mitchell): Mr. Narracci, what are your duties with the Coast Guard?

A. Deputy Shipping Commissioner.

Q. What does that duty include?

A. Well, it—the duties include signing and paying off merchant seamen on foreign voyages or on vessels that are going to a foreign port or returning from a foreign port. That is my main duty, plus making sanitary inspections, reading and checking the logs to see that the entries are made properly and other——

Q. Have you ever performed those duties with relation to the U.S.N.S. Escambia?

A. I have. I paid the ship off.

Q. And what date was that?

A. Well, I think it was the 15th or 16th of August.

Q. Of this year?

A. This year, yes, sir.

(Testimony of Joseph Narracci.)

Q. In what port?

A. Port of San Francisco.

Q. At that time did you see the official log book of the [56] U.S.N.S. Escambia?

A. Yes, I did.

Q. Could you identify it at this time?

A. I have it in my hand right now.

Q. That is the official log?

A. It is the official log of the U.S.N.S. Escambia.

Q. What duties do you have in relation to that log specifically at the time you were aboard the vessel for the pay off?

A. Well, as I said, to check it over for proper entries. There are different reports and drills that they have to hold aboard ship. Different ships have different drills to hold at different times, and upon completion of the pay off of the voyage I received the log from the captain and take it back to the office where they keep it, the custodian at the office.

Q. You returned the log of the U.S.N.S. Escambia to your office? A. I did.

Q. What is the title of that office?

A. The Shipping Commissioner's office.

Q. And what is the disposition of that log after you return it to that office?

A. It is kept on file and rechecked for—the personnel is checked and different loggings are checked. On serious loggings the men are brought up before the hearing to determine whether they should continue to serve or their shipping tickets

(Testimony of Joseph Narracci.)

removed, or probation for a certain time, whatever it happens to be, and [57] then they decide, depending on the seriousness of the offense, and the log is kept in the office.

Q. Who would be the official custodian of the log book?

A. Well, I imagine Captain Guerin would, the officer in charge of the Marine Inspection office.

Q. You are attached to that office?

A. Yes.

Q. Do you represent that office?

A. At the time right now, yes.

Mr. Mitchell: At this time we would offer the log book of the U.S.N.S. Escambia in evidence as Respondent's Exhibit next in order.

Mr. Haid: At this time we would like to object to the introduction of the so-called log of the Escambia in evidence. If your Honor please, I still think that no proper foundation has been laid in this case. [58]

* * * * *

The Court: The Court is now prepared to rule, gentlemen. The objection will be sustained.

Mr. Mitchell: Under Admiralty Rule 46-b, your Honor, we move that this be included in the record of excluded evidence.

The Court: I don't follow you.

Mr. Mitchell: We would like to make a record of excluded evidence for appeal, your Honor, and according to Admiralty Rule 46-b, if an objection to a question propounded to a witness is sustained

(Testimony of Joseph Narracci.)

by the Court, the latter upon request shall take and report the evidence in full unless it clearly appears that the evidence is not admissible on any ground or that the witness is privileged.

The Court: I haven't met that before.

Mr. Resner: I object to that too, they are trying to get in excluded evidence.

Mr. Mitchell: What we are trying to do is to make a record here.

Mr. Resner: I don't understand it.

Mr. Mitchell: The rule is quite clear, your Honor.

The Court: It is? Well, I never heard of it, and I have been around here a long time.

Mr. Meadows: To make a complete record, your Honor, it seems to be necessary rather than have any subsequent hearing on this. This is the rule in Federal Procedure.

The Court: Pass it up here. What section did you say? [67]

Mr. Mitchell: 46-b.

The Court: What evidence have you in mind?

Mr. Mitchell: This log book. We would like to introduce it in the record for excluded evidence.

The Court: I sustained an objection to that log book and that is your record. And it will be available. It is in for the purpose of identification.

Mr. Meadows: Your Honor, at this time would you admit this log book as our record of excluded evidence as well?

The Court: What is it?

(Testimony of Joseph Narracci.)

Mr. Meadows: Would you make a minute order admitting it as part of the record of excluded evidence? That it is in the record only would not be quite sufficient.

The Court: The log book is in evidence for the purpose of identification so that you have a complete record. And I sustained an objection to it.

Mr. Meadows: Very well. At this time, your Honor, we have made an offer of this log book as part of our record of excluded evidence. In other words, you haven't ruled upon that offer.

The Court: Offer of what?

Mr. Meadows: That the log is part of our record of excluded evidence, your Honor.

The Court: Let the record so show.

Mr. Meadows: Thank you, your Honor.

Mr. Resner: May I ask—are they through? [68]

Mr. Mitchell: Is the witness excused, your Honor?

Mr. Resner: I would like to ask a question. Are you through with your direct?

Mr. Mitchell: Yes, your Honor.

Cross Examination

Q. (By Mr. Resner): I just wanted to know this, Mr. Narracci; when did you deliver that official log book to the Government?

A. The day that I paid off the ship, sir, which was the 15th or 16th of August.

Q. And from the 15th or 16th of August, until the present time that log book has been in the pos-

(Testimony of Joseph Narracci.)

session of the Government attorneys, so far as you know? A. I don't know that, sir.

Q. Well, it has not been in your possession since August 15th, in the office of the Shipping Commissioner?

A. It was around the office for a couple of days; I know that.

Q. My question is this; answer it as best you can; I am not trying to quibble with you. Approximately on what day within a day or two, did you or your office deliver this official log book to the United States Attorney's office?

A. I don't know.

Q. Do you know what day? Do you have any idea?

A. I don't know. This is the first time I have seen it since I turned it over to the office.

Mr. Mitchell: Your Honor, I want to object to the materiality [69] of these questions here. They do not affect the issues in this case.

The Court: I will allow him to have a record. You may have the widest latitude.

Q. (By Mr. Resner): If you don't know when this document was delivered to the United States Attorney's office, who in your offices does know when it was delivered?

A. You can get that information from the Shipping Commissioner, I am sure.

Q. From the Shipping Commissioner?

A. Yes.

(Testimony of Joseph Narracci.)

Q. Well, aren't you the representative of the Shipping Commissioner?

A. I do, but I don't have the records with me.

Q. Could you find out by making a call to the Shipping Commissioner's office?

Mr. Mitchell: That would be hearsay, your Honor. We object to it.

Q. (By Mr. Resner): Well, could you find out?

A. If they would give me the information, yes.

Q. Is there a receipt for this log book when you delivered it to the United States Attorney's office?

A. I imagine they get a receipt. I didn't deliver it, but I imagine they do.

Q. Based upon your experience when you turn documents over to [70] the United States Attorney's office do you take a receipt for them?

A. Yes, sir.

Q. And does the date show when the document is delivered? A. Yes, sir.

Q. Who is the custodian of those receipts?

A. Commander Holm.

Q. Who?

A. Commander Holm, the Shipping Commissioner.

Q. Spell his last name? A. H-o-l-m.

Q. So he would have the receipts for the date upon which this document was delivered to the United States Attorney's office? A. Yes, sir.

Q. And he would know whether the document had come back to your office from that day to the present? A. Yes, sir.

(Testimony of Joseph Narracci.)

Q. But you don't know the answers to any of those questions? A. No, sir.

Mr. Resner: That is all.

The Court: Is that all from this witness?

Mr. Mitchell: Yes, your Honor.

The Court: Step down.

Mr. Mitchell: At this time the United States would continue with the depositions in this matter, if it please the Court. [71]

The Court: Proceed.

Mr. Mitchell: We have two more depositions, your Honor, of Mr. E. L. Wheeler, the chief officer, in relation to Mr. Bernard D. Oslin and in relation to Mr. Richard C. Cooper. They are quite repetitious to the ones we have read before, and for the convenience and the speediness of it, the Government at this time would suggest to only read portions that have not already been read in the other depositions.

The Court: These depositions went in on the theory of intent?

Mr. Mitchell: Yes, your Honor.

The Court: You have so indicated on the record discloses. But it is quite remote, as far as you have gone. There isn't a scintilla of evidence that I could act on, unless you have some corroborative testimony. However, I will give you a record on it. Proceed.

Mr. Mitchell: This deposition is of Mr. E. L. Wheeler in the case of Bernard D. Oslin in Admiralty No. 20,955. Eliminating the portions that are

repetitious, your Honor, I would start on page 7, at line 6, questioning on direct examination by Mr. Atkins representing the U. S. Government in this deposition:

DEPOSITION OF E. L. WHEELER

“Q. Are you responsible for the keeping of the ship’s log—official log?

“A. The official log—may we go off the record?

“Mr. Warren:”—who represented the petitioner Staples and Cooper—“Well, we are on the record.

“A. The official log is kept by the master. It is different from the smooth log and the rough log. The official log entries pertain to——

“Q. (By Mr. Atkins): The question was, are you responsible for making entries in the official log?

“A. In the official log, the master keeps the entries.”

And I will pass over to page 12—still direct examination by Mr. Atkins:

“Q. Now, do you remember or do you know a Bernard D. Oslin?

“A. Yes. Bernard D. Oslin was a maintenance a.b. aboard the ship.

“Q. Do you remember when he came aboard?

“A. He was on board the ship when I joined.

“Q. What were his duties aboard ship, first with reference to loading and discharging?

“A. Well, as to loading and discharging he had no duties. He was called a day worker. His hours

(Deposition of E. L. Wheeler.)

were from 8:00 to 5:00, 0800 to 1700, during which time he did maintenance work pertaining to the deck department, chipping, painting, tank cleaning. As far as discharge operations or loading operations, the watch standers, the men who are assigned to regularly assigned watches, are the ones who handle that."

We will pass on to page 15, line 21. Mr. Atkins asks the [73] questions.

"Q. Did Oslin perform all his duties during your period in Sasebo Harbor that he was required to perform? "A. No, sir, he did not.

"Q. What duties did he not?"

And on page 17:

"A. Now May 8 at 0615, in calling out the deck department Oslin was not on board.

"Mr. Resner: At what time?"

"A. 0615. Called out the deck department.

"Q. (By Mr. Atkins): Did you have occasion to see Oslin after that?"

"A. Well, this wouldn't be in here.

"Q. Did you have occasion to see Oslin after that?"

"A. Well, this wouldn't be in here. This is only official stuff that was in here.

"Q. Did you ever see him again?"

"A. I don't recall honestly, sir.

"Q. What duties was he to perform on the date he was reported not aboard?"

(Deposition of E. L. Wheeler.)

“A. In the deck department his duties consisted in docking and undocking the vessel, of working on the forward part of the vessel handling lines and winches to make the shift.

“Q. Who was Oslin’s immediate superior officer? “A. I would be. [74]

“Q. His immediate superior?

“A. As a licensed man, yes. Unlicensed it would be the boatswain.

“Q. What was his name?

“A. Gene Roggerman.

“Q. Did Oslin have permission to your knowledge to leave the ship?

“A. I gave nobody permission to leave the ship in my department. To explain, after we had docked at 5:00 o’clock. May 7th, he is off. His duties cease. He may leave the ship then. That is why the board was posted, a call back for the shift the following morning. He did not report back for the shift the following morning.

“Q. What was that date?

“A. May 7th at 1700 was the normal end of his working day. So naturally, he had—he didn’t have to get permission to go ashore. He naturally goes ashore.

“Q. What was the date and time that he was required to be back?

“A. As posted on the sailing board, 7:00 o’clock the following morning, according to union agreement they are supposed to report back one hour before the posted time.

(Deposition of E. L. Wheeler.)

“Q. Now any time during the voyage, during that particular voyage, did Oslin ever tell you anything about deserting the ship? [75]

“A. No, sir, he never told me anything about deserting the ship.

“Q. Did he ever express his feelings about his position aboard ship?

“Mr. Resner: I am going to object to the form of that question as calling for an opinion and a conclusion upon a matter that isn't relative here. The only issue in this proceeding is the question of desertion. Anything about feelings or opinions is completely beside the point.”

Mr. Resner: I ask your Honor to rule on my objection?

The Court: Objection sustained.

Mr. Mitchell: I would continue at page 24, line 21:

“Q. When you left Sasebo for sea was Oslin aboard? “A. Oslin was not aboard.

“Q. What steps were taken when it was discovered that he was not aboard for sea, if any?

“A. Then, after leaving each port, we make what is called a crew check, and in the log book a notation is made as to any men missing. Oslin was reported missing on the crew check and it was so noted in the log.

“Q. Did you search his living quarters?

“A. The whole ship is searched both for stow-aways and the crew check.

(Deposition of E. L. Wheeler.)

“Q. Did you search Oslin’s living quarters?

“A. Yes, sir, we searched all spaces on the ship. [76]

“Q. Was his gear aboard?

“A. His gear was on board, sir. The following day we packed it.

“Mr. Atkins: No further questions at this time.”

Mr. Resner: I waive my cross examination, your Honor.

The Court: Very well.

Mr. Mitchell: In the matter of Richard C. Cooper there are a few points in that deposition also, your Honor. This is direct examination by Mr. Atkins representing the Government in this matter and the objections and cross examination were by Mr. Warren representing Roos Jennings and Haid. I will go to page 5, line 10:

“Q. Do you know a Richard C. Cooper?

“A. Yes, sir, I do.

“Q. How do you come to know Richard C. Cooper?

“A. Richard C. Cooper was an able bodied seaman in a watch standing capacity aboard the *Eseambia* during the period of my time as chief officer on the vessel.

“Q. When did he come aboard?

“A. He was on board prior to my joining the vessel.

“Q. In what capacity did he serve?

“A. As an able bodied seaman.

(Deposition of E. L. Wheeler.)

“Q. What department?

“A. Deck department.

“Q. What were his duties aboard? [77]

“A. His duties were steering the vessel, standing lookout, and normal deck maintenance work, scraping and painting on his periods of watch, plus handling valves, cargo valves, turning of valves, connecting of hose during cargo operations.

“Q. Who was his immediate superior officer?

“A. His immediate superior would be the boatswain working under my direction.

“Q. Was Cooper aboard ship performing his required duties during the entire period when you were in Sasebo between May 4th and May 8th, 1957?

“A. No, sir, he was not.

“Q. On the morning of May 8th—

“A. On the morning of May 8th, he missed the shift.

“Q. Did he miss the ship at the time the ship departed for sea?

“A. This was a shift from dock to anchorage awaiting the final loading berth.

“Q. And he missed that?

“A. He missed that, that is right. That was a call back for the deck department at 0700 the morning of May 8th.

“Q. Was he aboard when the ship departed for sea on May 8th?

“A. No, sir, he was not aboard when the ship departed for sea May 8th.”

(Deposition of E. L. Wheeler.)

Then we go to page 7, line 13:

“Q. Of your own present recollection, how long had the [78] sailing board contained the information as to the movement of the ship on May 8th and the departure of the ship for sea on May 8th?

“A. In excess of 24 hours.

“Q. When did you last see Richard C. Cooper?

“A. To the best of my knowledge, May 7th when the vessel docked.

“Q. Was he working? What was he doing at that time?

“A. Assisting in mooring the ship.

“Q. When was his presence next required aboard ship?

“A. They shift watches. I believe Cooper was on a 12:00 to 4:00 watch at this time, and normally he would have been required to be on shift from noon until 4:00 o'clock and from midnight until 4:00 in the morning. Those were his normal periods. I think he was on the 12:00 to 4:00. In the union agreement they shift watches every three months on those trips.

“Q. Then what was the actual time that he would have been required to be aboard?

“A. If it was the 12:00 to 4:00 watch and not say, the 4:00 to 8:00 or the 8:00 to 12:00 watch, he would be required to be aboard four on and eight off, and in between those periods of time. And I can't testify that he was on the 12:00 to 4:00 watch, truthfully, at that time. I think he was to the best of my recollection. Within the 24 hours, [79] he

(Deposition of E. L. Wheeler.)

should have been on board at least eight hours of that time, somewhere in that span.

“Q. That would be on May 7th?

“A. That would be May 7th—8th.

“Mr. Warren: Do you stand watches in port?

“A. We do not break watches on tankers.

“Mr. Atkins: Well, you can get him on cross, counsel.

“Q. Was a search made of Cooper’s room?

“A. When we departed?

“Q. Yes.

“A. Yes, a search was made of Cooper’s room together with all the other spaces on the ship, and an appropriate entry was made in the ship’s log book.

“Q. Was his gear aboard?

“A. His gear was aboard.

“Q. All of his gear?

“A. I do not know, sir.

“Q. Did he ever state to you an intention to desert the ship? “A. No, sir, he did not.

“Q. Did he ever express dissatisfaction with conditions aboard the ship?

“A. Not to the best of my recollection, although perhaps he might have griped. Griping is normal on those ships. It goes in one ear and out the other, as far as I am [80] concerned. I don’t pay much attention.

“Q. Did Cooper ever complain of illness?

“A. To the best of my recollection Cooper never complained of illness.

(Deposition of E. L. Wheeler.)

“Q. Did Cooper ever talk to you about obtaining a mutual consent discharge?

“A. He never discussed it with me. I understand by hearsay that he went up to the master and requested such a thing.

“Q. Did you give Cooper permission to remain away from the ship beyond the normal period from which he would remain away?

“A. I must explain this. On this run, because we do not break watches in port, to keep the man as happy on a psychological basis as possible, I let it be known to the deck department delegate who was the union representative aboard the ship, that as long as I have three men on a watch, if they want to arrange among themselves for time ashore, and another man is standing the watch for them, they have my approval.”

The Court: What he heard may go out, that he went to the captain, as hearsay.

Mr. Haid: Thank you, your Honor.

Mr. Mitchell: (Reading) “And that the first time that I did not have three men, which is the normal watch, that I would require every man to stand his watch. And on this [81] ship, as on most ships I have had, that system worked out rather well. So whether somebody was standing his watch, I don't know. I did have three men on watch as far as the deck department was concerned, all the time the ship was in Sasebo.

(Deposition of E. L. Wheeler.)

“Q. On May 8th when the ship sailed was Cooper aboard?”

“A. On May 8th when the ship sailed Cooper was not aboard.”

And there is cross examination following.

Mr. Haid: Cross examination is waived.

Mr. Mitchell: We offer these depositions in evidence, your Honor, in entirety. I have only read those portions to shorten the amount of time we take of the Court.

Mr. Resner: We object, your Honor. Anything that goes into evidence is taken down by the shorthand reporter. There isn't any rule that allows a deposition in and of itself to be an evidentiary document.

Mr. Mitchell: Would your Honor care that I read the entire depositions in? The further portions of these are repetitious of the other depositions.

The Court: Well, you have got the evidence in the record that you wish, haven't you?

Mr. Mitchell: Yes.

The Court: That's final. That will be sufficient for all purposes in this case.

Mr. Mitchell: We offer the entire matter in for the record [82] of excluded evidence then, your Honor.

The Court: The answer to that is you are not concerned about this surplusage in this deposition that you have indicated serves no purpose.

Mr. Mitchell: We wanted the entire depositions in evidence, your Honor, but to save time we have selected these portions.

The Court: At the same time, saving time is no answer to the legal proposition itself. In any event, the Court has ruled, gentlemen. We will proceed with this case.

Mr. Meadows: Your Honor, so that we may know how to proceed in the future in these matters, I would like to know if your Honor would make a ruling on these depositions, whether your Honor would consider it to be absolutely necessary to read all portions that we consider to be material rather than just offer the depositions themselves in evidence.

Mr. Resner: If your Honor please, we are only trying this case and not some case the Government may bring next week or next year. It is not this Court's problem, or any Court's problem to educate the Government's attorneys.

Mr. Meadows: We maintain, your Honor, that read in their whole these depositions can be of help in showing the intention of the claimants and reading only scattered portions is not as beneficial.

The Court: You forget that the Court has ruled. You have a record here. [83]

Mr. Meadows: Thank you, your Honor.

The Court: You may proceed.

Mr. Mitchell: This will complete the evidence we have present at this time, your Honor, but we would like leave for a continuance to bring in the deposition of the chief engineer Snoopkagel, when

he becomes available. He is now at sea on a ship which shall return the early part of the coming month, to the best of our knowledge.

Mr. Resner: We object. They are supposed to be ready at the time of trial. This is a summary proceeding.

Mr. Haid: This case was set at the Government's request.

Mr. Mitchell: This case was not set at the Government's request, your Honor.

The Court: How was it set?

Mr. Mitchell: It was set at a hearing that came about when they petitioned for a return of their money in the registry.

Mr. Haid: The Government certainly made no objection.

Mr. Resner: As a matter of fact, Judge Carter said he was going to hear this case at once because the law provided these were summary proceedings and should be heard at once, and only at the Government's request, because they pleaded for time to produce witnesses and depositions, did he continue it for trial until last Friday, and the Government came in here Friday and said they were ready.

Mr. Meadows: We only ask this time—— [84]

Mr. Resner: This is the time for trial.

The Court: It was indicated to me on last Friday before we adjourned that the Government wasn't ready. That was indicated to me. That was the reason I gave them a continuance at that time until this morning. Now there will be no further continuance.

Mr. Resner: Thank you, your Honor.

If that is the Government's case, your Honor, on behalf of petitioner Oslin in matter 20,955, it is our contention that they haven't proved anything set forth in their petition, and I ask your Honor for an order dismissing the petition of the United States and entering decree for petitioner Oslin on his petition.

Mr. Haid: I am going to join in that, your Honor, on behalf of petitioners Mr. Staples in 20,954 and Mr. Cooper in 20,956. There is nothing before the Court to show that these men deserted the vessel.

The Court: That will be the order. Prepare your judgment, gentlemen.

Mr. Resner: Thank you, sir.

Could we have a moment to consult about a procedural matter in this case, your Honor?

The Court: Yes.

Mr. Resner: What we are discussing is this, your Honor——

The Court: I know what you are discussing.

Mr. Resner: The money of these three seamen is held in the registry by Mr. Welch, commissioner, and the clothes are held by the commissioner down at Sansome Street, and we were discussing, Mr. Haid and I, the form of the order. Since the men are here in Court and are available, I assume the order would direct that their money and effects be turned directly over to them.

The Court: That will be the order.

Mr. Resner: Thank you Judge.

Mr. Meadows: Your Honor, before you enter the order may I be heard for just a minute.

The Court: What is it?

Mr. Meadows: May I be heard for one minute before you enter the order in these cases?

The Court: Oh, yes.

Mr. Meadows: Your Honor, as you noticed, there is the petition on file and the claims in this matter, and it is our position that had we been able to offer the log—and we of course maintain that they were properly admissible in this case—the burden of proof is on the petitioners and claimants to secure this in evidence, and since there is no evidence to counter it, they have not met the burden of proof. I just pointed that out.

The Court: Yes, but they come in here and charge them with desertion. It hasn't been proved. It is as simple as that. Period. [86]

Mr. Meadows: That is all, your Honor. I just wanted to mention that.

Mr. Resner: Thank you, your Honor.

Mr. Meadows: Your Honor, one more thing, if I may, before—

The Court: What's that?

Mr. Meadows: One more thing. Since your Honor has ruled—

The Court: Don't miss anything. Proceed.

Mr. Meadows: We would like to know if your Honor would stay the payment of the wages to these claimants pending an appeal in this matter.

Mr. Resner: We oppose that, your Honor.

The Court: I didn't follow it.

Mr. Resner: They want to file a notice of appeal and they want to tie up the money while they take an appeal. We object to that, your Honor.

The Court: If you will go and get the order I will sign it forthwith so that you won't be bothered about that.

Mr. Resner: Thank you, very much, your Honor. We will do that.

Mr. Meadows: Thank you, your Honor.

The Court: You're welcome, sir.

Mr. Resner: The point is this, your Honor: The Government anticipating its utter failure to be able to do anything here, came in with a notice of appeal. They have got to get a stay of the disposition of the money from the court of appeals. [87]

The Court: That is what he went out to get now.

Mr. Resner: We want to be heard in the court of appeals. We will get over and talk to the Chief Judge if that is going to be tried before it happens. It would seem to me, your Honor——

The Court: I want everybody to enjoy their freedom. They can do whatever they wish; I'm not stopping them.

Mr. Resner: What I can't understand is why the Government hasn't got better things to do than to persecute these three seamen.

Mr. Haid: First time I have ever seen a notice of appeal before the order was entered.

The Court: If there is any further assistance that I can be——

Mr. Resner: They can't file and serve notice of appeal until there is something to appeal from,

your Honor. There is nothing to appeal from here yet.

Mr. Meadows: There will be. There has already been an order entered in the record. Do you want to argue that point?

Mr. Resner: No, I don't want to argue it. We are going to have a formal written order. That is what they appeal from. They don't appeal from the oral order.

The Court: I'm glad that all these gentlemen are taking this in stride, doing the best you can under difficulties. The only difficulty here is the Government wasn't prepared. [88] That's all. It is as simple as that. Any court will understand that if they read the record in this case.

Mr. Resner: Thank you, your Honor. I think your Honor is correct.

(Adjournment.) [89]

[Endorsed]: Filed Oct. 15, 1957.

RESPONDENT'S EXHIBIT "B"

(For Identification)

OFFICIAL LOG-BOOK

Merchant Marine of the United States, Treasury
Department, United States Coast Guard, Ves-
sel: U.S.N.S. Escambia.

* * * * *

Volume 2, page 5: lines 1 through 20:

List of Crew and Report of Character:

Nov. 20, 1956, Sasebo, Japan—Bernard D. Oslin
Z503798-DI Dk. Maint. Absent without leave from

his vessel and from his duties. 0800-1700. Fined 2 days pay—\$23.73. Copy of the logging was delivered to Oslin. The above entry was read audibly and distinctly to Oslin and he replied: "No reply".

/s/ E. L. Wheeler, 1/o,

/s/ M. W. Mote, Master.

2/8/57, Kaohsiung, Formosa—Bernard D. Oslin Z503798 DI Dk. Maint. Absent without leave—1200. Fined 2 days pay \$23.73. This entry was read audibly and distinctly to Oslin and he replied: "I deny the charge".

Feb. 13, 1957, Sasebo, Japan—Bernard D. Oslin Z503798 DI Dk. Maint. Absent without leave 1510. Fined 2 days pay \$25.40. The above entry was read to Oslin audibly and distinctly and he replied: "No Reply".

/s/ E. L. Wheeler, 1/o,

/s/ M. W. Mote, Master.

Page 6, Lines 25 through 48:

Feb. 8, 1957, Kaohsiung, Formosa—Richard C. Cooper, Z 5229 AB. Absent without leave 1200. Fined 2 days pay \$21.93. The above entry was read to Cooper audibly and distinctly and he replied: "Sailing board was not posted."

/s/ E. L. Wheeler, 1/o,

/s/ M. W. Mote, Master.

Feb. 13, 1957, Sasebo, Japan—Richard C. Cooper Z 5229 AB. Absent without leave at 1510. Fined

2 days pay \$23.47. The entry was read to Cooper audibly and distinctly and he replied: "I was aboard one hour before sailing".

/s/ E. L. Wheeler, 1/o,

/s/ M. W. Mote, Master.

May 1, 1957, Manila Bay—Richard C. Cooper Z 5229. Neglected his duty in failing to stand his watch 0000-0400. Fined 2 days pay \$23.47. This entry was read to Cooper audibly and distinctly and he replied: "No Reply".

/s/ E. L. Wheeler, 1/o,

/s/ M. W. Mote, Master.

Feb. 13, 1957, Sasebo, Japan—James P. Staples. Z394273. Pumpman. Absent without leave 1510. Fined 2 days pay \$29.60. Entry was read audibly and distinctly to Staples and he replied: "Was aboard 1 hour before ship sailed".

/s/ E. L. Wheeler, 1/o,

/s/ M. W. Mote, Master.

* * * * *

Pages 17, 18 and 19:

Sasebo, Japan, May 8, 1957—James P. Staples Z 394-273-DI. Pumpman. Deserted the vessel and his duties on May 5, 1957. Staples complained to the Chief Engineer at 0700 on May 5th that he was too tired to continue his duties of discharging the cargo. He was relieved by the Chief Engineer, who subsequently performed the duties of Pumpman until the cargo was discharged. Staples instead of

resting to resume his duties went ashore and did not return to the vessel even though he was informed that the (17) vessel was to Sortie for tank cleaning. He was warned by the Master that if he failed to join the vessel he would be logged as a deserter. Since he was seen ashore by various ships crew members and officers including the Master and warned to return and perform his duties and he was in possession of all his faculties he is presumed to have wilfully deserted and is therefore declared a deserter under Sect. 4596 USC First Paragraph and all his pay and emoluments as well as his personal effects declared forfeit. His personal effects were inventoried and are in possession of the Master.

/s/ E. L. Wheeler,

/s/ M. W. Mote, Master.

Sasebo, Japan, May 8, 1957—Bernard D. Oslin Z 503-798-D-1 D. Maint. Deserted the vessel and his duties May 7, 1957. Oslin was warned by the Master while ashore that failure to return to his vessel and his duties would constitute desertion. He was in possession of (18) of all his faculties and understood the admonition. Therefore, as he failed to return to the vessel and his duties he is hereby declared a deserter and under Sect. 4596 USC First Paragraph all pay and emoluments as well as his personal effects are declared forfeit. His personal effects were inventoried and are in the possession of the Master.

/s/ E. L. Wheeler,

/s/ M. W. Mote, Master.

Sasebo, Japan, May 8, 1957—Richard C. Cooper Z 5229-D-1 AB. Deserted the vessel and his duties May 7, 1957. Cooper requested Mutual Release Discharge and upon being informed by the Master that it was impossible, was also warned that failure to complete his contract as per the shipping articles would constitute desertion. Cooper went ashore May 7th and sent a messenger aboard on May 8th to get money he had left aboard. Since he was well aware of sailing time and in possession of all his faculties he is hereby declared (19) a deserter under Sect. 4596 USC First paragraph and all pay and emoluments as well as personal effects forfeit. Effects inventoried. (20)

/s/ E. L. Wheeler,

/s/ M. W. Mote, Master.

* * * * *

[Endorsed]: No. 15730. United States Court of Appeals for the Ninth Circuit. United States of America, Appellant, vs. James P. Staples, Bernard D. Oslin and Richard C. Cooper, Appellees. Transcript of Record. Appeals from the United States District Court for the Northern District of California, Southern Division.

Filed: October 3, 1957.

/s/ PAUL P. O'BRIEN,

Clerk of the United States Court of Appeals for the Ninth Circuit.

In the United States Court of Appeals
for the Ninth Circuit

No. 15730

UNITED STATES OF AMERICA,

Appellant,

vs.

JAMES P. STAPLES, BERNARD D. OSLIN,
and RICHARD C. COOPER, Appellees.

STATEMENT OF POINTS ON WHICH
APPELLANT INTENDS TO RELY

Comes now Appellant United States of America and states that it intends to rely in this appeal upon the following points:

1. The District Court erred in excluding the relevant log entries from evidence.

2. The District Court erred in holding that the burden of proof was on the United States to establish that appellees' failure to return to their vessel prior to its departure from Sasebo constituted desertion; i.e., to establish that appellees were not entitled to the relief sought in their petitions.

3. The District Court erred in granting appellees affirmative relief in the absence of any showing that they intended to return to their vessel prior to its departure from Sasebo.

4. The District Court erred in not holding that appellees had deserted from their vessel.

5. The District Court erred in denying the Government's motion for a judgment by default on the petition of Appellee Oslin.

6. The District Court erred in granting appellees' petitions and in denying the Government's petitions.

GEORGE COCHRAN DOUB,
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LLOYD H. BURKE,
United States Attorney,

PAUL A. SWEENEY,
/s/ KEITH R. FERGUSON,
/s/ GRAYDON S. STARING,
ALAN S. ROSENTHAL,
Attorneys, Department of Justice.

[Endorsed]: Filed November 3, 1957. Paul P. O'Brien, Clerk.

